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HONEY MARKETS

U. S. GOVERNMENT REPORT
Information from Producing Areas (first half of November)

CALIFORNIA POINTS: Southern California.—Very few flowers are in bloom, and the winter season is approaching. It is thought that weaker colonies may need protection if the winter is as long and cold as anticipated, but in general bees are in fair to good condition. The heavy early rains got vegetation started in good shape, especially in San Diego County. One car light amber sage reported sold for 9c per lb., but dealers generally are now offering only 8c per lb. for sage. Few sales white orange extracted at 15c per lb. Beeswax has been selling for 30c per lb.

NORTHERN CALIFORNIA.—Most beekeepers have completed the season's work and are waiting for winter. Although several carloads of star thistle have been sold, one of them for export, demand in general is small. Some beekeepers are discouraged over the low prices and lack of demand. Carlots white thistle reported at 8-8½c per lb.; ton lots 8¾c; 60s 9c; small pails 9½c per lb. Large quantities of average yellow beeswax sold at 30c per lb.

PACIFIC NORTHWEST.—Conditions show little change during the past 2 months. Demand varies greatly with different beekeepers. Some are selling slowly, others have a demand greater than the available supply. Ton lot sales white sweet clover and alfalfa 10c; light amber, ton lots 9c; 60s 10c per lb.

INTERMOUNTAIN REGION. — Conditions vary greatly. Some areas have had sub-zero weather and much snow, with bees clustering and no flights for 5 weeks; in other sections not far away days are repored frequently sufficiently warm for bees to fly freely. Brood is still hatching, in several areas. Some beekeepers are not through packing; and as usual many are wintering on summer stands. With plenty of moisture, honey plants should be in good condition next season.

On the whole honey is rapidly getting out of the producers' hands, although in scattered sections demand has slackened and inquiries are scarce. Based on the selling prices it would seem as if the market had stiffened slightly during the past two weeks. Carlot sales of white sweet clover and alfalfa, or one flavor or the other, straight, continue to be reported at 8c, 8½c and 8¾c per lb., and more beekeepers are repored now willing to sell at 8½c per lb.; but at least 4 cars were reported sold at 9c per lb. One car water-white sold at 8¾c per lb. Ton lots white 8¾; 60s 10-11c; small pails 10-13c per lb.

Much price-cutting reported among the comb producers, resulting in unusually wide price ranges. Carlot sales reported at $3.15 and $3.50 per case straight for all grades white sweet clover and alfalfa except culls. Other carlot sales reported at $3.50 and $4.00 per case for choice, $4.00 and $4.40 for fancy, and $4.25 per case for extra fancy. One car light amber comb sold for $3.50 per case. Beeswax is stronger and has brought the beekeeper 30-35c per lb.

ARIZONA.—Bees are reported in fine condition for winter. The creasote bush and other plants yielded until after the first of November in some localities. A large amount of brood is reported in the hives, and heavy consumption of stores. Recent sales extracted reported at 8½c per lb.

TEXAS.—Continued rains tended to prevent bees from working on asters and goldenrod, and considerable feeding will be necessary except in a few favored sections where ample stores were secured. Many colonies have brooded up, and young bees are in fair to good supply in most sections. River floods are reported to have washed away some hives in bottom lands. Supply of honey very light and shipments to Texas from outside states continue. Few sales light amber extracted in ton lots 12c per lb.; 10s, 13c; bulk comb, small pails, ton lots, 15-18c per lb. Beeswax, 30-35c per lb.

PLAINS AREA.—Clover should be in good condition next season, as snow has fallen already and there has been ample fall moisture. Bees are generally in good condition. Carlot sales white clover reported at 9c per lb.; ton lots 9-10c; 60s 12½c; small pails 15c per lb. Clover comb has ranged all the way from $3.00 to $4.80 or more per case. Most lots of No. 1 have sold recently from $4.25 to $4.50 per case.

EAST CENTRAL AND NORTH CENTRAL STATES.— The unusually cold weather has been hard on bees still on summer stands and has tended to prevent preparing them for winter. Most colonies, however, are now packed or put in cellars. On the whole, they are strong in bees and have ample stores. Some have required partial feeding, and in parts of Ohio it is reported that much feeding will be necessary.

Demand for honey is hardly normal. Candied honey put up in 1 lb. butter cartons is reported to be in good demand, but otherwise interest is light. Beekeepers report that the market in many cities is demoralized due to the fact that some producers are selling a few pounds to retailers at the same price a wholesale buyer must pay. Good demand reported for beeswax. White clover extracted reported sold in ton lots at 9½c per lb.; 1 car lot 9c; 60s 10-13c, few 14-15c per lb.; small pails 12-17c per lb. Wide range reported for white clover comb, No. 1 and fancy selling from $4.00 to $6.00 per case, mostly around $4.50-5.00; few cases No. 2 $3.25 per case. Beeswax, 30-35c per lb.

NORTHEASTERN STATES.—Especially in the upper part of the area the weather has been unusually cold with much rain and snow, permitting bees only occasional flights. In Northern New York some bees have not flown for a month. The unfavorable weather has greatly hindered packing. Cellar-wintered bees are now being put away. The ground is full of moisture, which should insure good honey plants for next year. Colonies are generally well provided with stores except in Hudson River Valley and along the upper lake shore, where some colonies are reported to have starved already.

Demand better for less car lots extracted clover, and unusually good with some; demand for extracted buckwheat variable. Retail demand in producing areas ranges fair to good. Large buyers reported holding off. Ton lots of white clover have generally sold at 10¼-11c per lb.; 60s 11-13c; small pails 15c per lb.; light amber, ton lots, 9c per lb.; buckwheat, ton lots mostly 8-8½c; 60s 9-10c; small pails 10-15c per lb. Comb, 24-section cases, No. 1 white clover $4.50-6.00, mostly around $5.00; fancy $5.00-6.50, mostly $5.50-6.00; No. 2 $4.00; buckwheat No. 1 $4.00, few $5.00-5.50.

From Producers' Associations

The crop of Texas honey has about all been cleaned up and considerable honey imported into the state. We know of one large beekeeper in central Texas who has already purchasd his fourth car of outside honey to take care of his local demand. The crop was very short in Texas. Demand is normal. Bees are in fairly good condition for winter as fall rains came in time to provide pollen for brood-rearing. Feeding will be required in some districts. Colony strength is about normal for this time of the year. Floral conditions are good, and prospects are for a good crop next year from biennial plants which require winter growth.

Texas Honey Producers' Association,
E. G. Le Stourgeon, Mgr.
San Antonio, Texas.

Honey Producers' Reports

1. What per cent of the honey produced in your locality has already left the hands of the producers?
2. At what price has honey been sold, or contracted for, if any, in large lots (carload or less) in your locality during the past month?
   (a) Extracted honey, per lb.? (b) Comb honey, fancy and No. 1, per case?
3. What are prices when sold to grocers in case lots? (a) Extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) Comb honey, fancy and No. 1, per case?
4. What is the retail price to consumers in your locality? (a) Extracted honey in 5-lb. pails or other retail packages in terms of 5-lb. pails? (b) Comb honey, fancy and No. 1, per section?
5. How is the honey now moving on the market in your locality? Give answer in one word as slow, fair or rapid.
6. What is the condition of the colonies at this time in your locality as compared with normal? Give answer in per cent.
7. What is the condition of the honey plants for next season in your locality as compared with normal? Give answer in per cent.
8. How does the number of colonies in your locality compare with the average number during the past five years? Give answer in per cent.

State	Reported by:	Pct. Sold	Carload Ex.	Carload Comb		Wholesale Ex.	Wholesale Comb	Retail Ex.	Retail Comb	Movement	Col. Con.	Plant Con.	No. Col.
Ala.	W. D. Achord	75						.80		Slow	100	100	110
Ala.	J. Clay Dickman					.88		1.20		Fair	95	80	100
Ala.	J. M. Cutts	80						.80	.30	Fair	100	100	105
Ark.	Jas. Johnson						4.80	1.25	.30	Fair	80	100	
Ark.	J. V. Ormond									Slow	75	75	100
Calif.	M. C. Richter	60	.14					1.50		Slow	90	100	100
Calif.	Geo. Larinan	80	.11½					1.00		Slow	100		80
Calif.	M. H. Mondleson							1.20	.38	Fair	100	0	
Calif.	M. A. Saylor	85	.08½	4.00		.65	4.80	.80	.25	Fair	100	100	110
Colo.	B. W. Hopper	90	.08½	4.00		.60	4.00	.75	.20	Fair	100	100	110
Colo.	J. A. Green	90				.75	3.50	.90	.20	Fair	100	100	100
Conn.	Allen Lathan	30				1.00	6.75	1.25	.38	Rapid	110	100	110
Conn.	A. W. Yates	30				1.00	7.50	1.30	.40	Rapid	100	100	125
Fla.	C. C. Cook	40	.07½			.80		1.00		Rapid	100	100	125
Fla.	Harry Hewitt	90				.80		1.00		Rapid	100	100	100
Ga.	J. J. Wilder	85	.11								100	100	120
Ida.	J. E. Miller	13	.09	4.13		.67	4.25	.80	.23	Fair	90	100	110
Ills.	C. F. Bender						5.20		.30	Fair	90	80	100
Ills.	A. L. Kildow	40	.10	4.00			5.00	.85	.25	Fair	110	50	115
Ind.	Jay Smith	100						1.25	.35	Fair	75	125	100
Ind.	T. C. Johnson					.90	4.80	1.15	.28	Slow	90	100	100
Ind.	E. S. Miller	20				1.00	5.75	1.25	.30	Fair	100	95	95
Iowa	W. S. Pangburn	50		3.75		.65		.95	.23	Fair	75	100	100
Iowa	E. G. Brown	80	.10			.75	4.65	1.00	.28	Rapid	90	100	110
Iowa	Frank Coverdale	70	.10½	4.00		.70	4.12	1.00	.26	Fair	100	125	125
Kans.	J. A. Nininger	33				.75	5.00	.95	.25	Rapid	100	100	100
La.	E. C. Davis	80	.09			.65		.88		Fair	100	100	100
Maine	O. B. Griffith	25				1.00	7.00	1.50	.35	Slow	80	95	90
Md.	S. G. Crocker, Jr.	70				1.00	5.75	1.25	.30	Fair	90	100	100
Mass.	B. N. Gates	40							.45	Fair	88		100
Mich.	Floyd Markham	40				.80	5.25	1.25	.30	Fair	100	90	100
Mich.	Ira D. Bartlett	80	.11			.75	5.25	1.00	.30	Fair	100	100	85
Mich.	E. D. Townsend	75								Fair	100	75	110
Minn.	Francis Jager	80	.10			.88	4.40	1.10	.30	Fair	100	100	125
Mo.	J. H. Fisbeck	20				1.00	5.50	1.25	.30	Fair	50	75	100
Mo.	J. M. Romberger	50				.80	4.80	1.00	.28	Fair	100	100	100
Nebr.	J. H. Wagner	35	.11	4.00		.70	4.75	1.00	.25	Fair	95	100	60
Nev.	E. G. Norton	50	.08½			.50				Slow	90	90	90
Nev.	Geo. G. Schmeis	75	.08¼							Slow	100	100	100
N. J.	E. G. Carr	50						1.25	.35	Fair	100	80	100
N. Y.	Geo. B. Howe					.70	4.50	.95	.28	Rapid	95	100	100
N. Y.	Adams & Myers	25				.75	5.50	1.13	.30	Fair	75	50	100
N. Y.	F. W. Lesser	80	.10¾	4.80		.70	5.00	1.00	.30	Fair	95	125	150
N. Y.	R. B. Willson	50	.12½	4.65				1.13	.28	Fair	90	85	90
N. C.	C. L. Sams	75				1.00	5.25	1.25	.30	Fair	90	100	105
N. C.	W. J. Martin		.10½			1.00	4.50	1.25	.35	Fair	100	100	125
N. C.	C. S. Baumgarner	100				1.00		1.25	.30	Fair	110	90	100
Ohio	R. D. Hiatt	40				1.05	6.00	1.35	.35	Fair	90	75	100
Ohio	J. F. Moore	15				.85	5.00	1.15	.25	Slow	90	80	100
Ohio	Fred Leininger	50	.09½	4.80		1.00				Slow	100	90	100
Okla.	Jos. Heueisen	100				1.25		1.35	.35	Rapid	80	90	75
Okla.	C. F. Stiles	80				.90	5.00	1.15	.30	Fair	60	80	70
Ore.	H. A. Scullen					.77	6.00	1.00	.30	Slow	100	80	90
Pa.	Chas. N. Greene	50				.75	5.00	1.00	.35	Fair	95	100	100
Pa.	D. C. Gilham	18				1.05	7.20	1.40	.42	Fair	95	90	110
Pa.	Harry Beaver	50				.70	3.50	.80	.20	Fair	95	95	100
Tenn.	J. M. Buchanan	100						1.25	.35	Slow	75	75	95
Tex.	H. B. Parks	100				.75		.90		Slow	75	90	90
Tex.	T. A. Bowden	95				.80		1.05		Slow	75	50	70
Tex.	J. N. Mayes		.10					.90		Rapid	90	80	90
Utah	M. A. Gill	75	.08	4.00		.50		.60	.22	Fair	100	110	120
Vt.	J. E. Crane	90		5.50		1.00	6.00	1.25	.35	Fair	100	100	110
Va.	T. U. Asher	50				1.05	6.00	1.25	.30	Fair	90	95	100
Va.	L. N. Gravely					.75	5.50	1.00	.38	Fair	65	70	90
Wash.	W. L. Cox					.78	5.00	1.00	.30	Fair	85	85	110
Wash.	G. W. B. Saxton	10	.10			.60		.75		Slow	100	100	100
W. Va.	T. K. Massie	75				1.00	6.00	1.40	.40	Slow	60	30	85
Wis.	E. Hassinger	50	.11			.80		1.00		Fair	90	100	100
Wis.	H. F. Wilson		.11			.70	5.25	1.00	.30	Fair	100	100	100
Wyo.	A. D. Brown	50	.08⅛				5.25	1.00	.35	Slow	100	105	90

HOFFMAN & HAUCK, Inc.

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Annual Stock Reduction Sale

Glass and Tin Honey Containers

2½-pound Cans, in cartons of 100	$3.75 a carton
5-pound Pails, in cartons of 50	3.25 a carton
10-pound Pails, in cartons of 50	4.75 a carton
60-pound Tins, new, 2 tins per case	.90 each
160-lb. Kegs (ideal container for both buckwheat & clover honey)	1.20 each

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16-ounce honey capacity, 2 dozen per carton	$1.15 per carton
3-pound or quart capacity, 1 dozen per carton	.85 per carton

Special Hazel-Atlas Tall Jars Including Caps

8-ounce honey capacity, 2 dozen per carton	$0.95 per carton
16-ounce honey capacity, 2 dozen per carton	1.20 per carton
2-pound honey capacity, 1 dozen per carton	.90 per carton

Honey for Road Stands

White Clover, 60-pound tins, crystallized	13c per lb.
White Clover, 60-pound tins, liquid	14c per lb.
L. A. Southern, 60-pound tins, liquid	11c per lb.

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Shallow Frames, corner-cut top-bar	$4.00 per 100
Shallow Frames, grooved top-bar	3.50 per 100
10-frame Hive-bodies with frames	5.50 per 5
10-frame Hive-bodies, empty	3.25 per 5
10-frame Shallow Supers, with frames	4.00 per 5
10-frame No. 1 Style Comb Supers	4.00 per 5
Sections, size 4¼x4¼x1⅞, A Grade	5.00 per 500
Sections, size 4¼x4¼x1⅞, B Grade	4.00 per 500
Foundation, Medium, 25-lb. lots, 60c per lb.; 5-lb. lots	65c per lb.
Foundation, Thin, 25-lb. lots, 65c per lb.; 5-lb. lots	70c per lb.

Prices Good Until Dec. 31st, 1925

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We want you to read our twenty-page illustrated circular on package bees, written to bring about a better understanding between the buyers and sellers of bees and queens.

Just send us your's and your neighbors' names. We hope it will be worth that much to you.

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Let us show you how much we can save you on your Hive Bodies, Supers, Frames, Foundation or anything you might want.

Ten-frame bodies, in lots of 50, 60c each. Ten-frame bodies, in lots of 50, with frames, $1.00 each. White Pine Hoffman frames, per 1000, $45.00.

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Wired Foundation Saves the Beekeeper a Great Deal of Time, Labor, and Patience

A. A. AUGENSTEIN

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This is the opinion of A. A. Augenstein of Dakota, Illinois, whose picture, and that of one of his apiaries, is shown here. With an 80 acre farm to manage he must take advantage of labor saving improvements. Mr. Augenstein is not only a good farmer but also a successful beekeeper and his opinion is commonly shared by beekeepers whose first business is the farm.

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GLEANINGS IN BEE CULTURE

DECEMBER, 1925

EDITORIAL

OUR CORNERSTONE

REMEMBER at all times that improved bee culture is our end and aim, and we trust no one will hesitate to give any facts from experience because they may tend to overthrow any particular person or "hobby." If any of our special plans don't work, or if anything we advertise has had its value overestimated, here in these pages is the place of all others to set the error right.—From A. I. Root's "introductory" in the first issue of Gleanings in Bee Culture, January 1, 1873.

Effect of Weather Upon Honey Flow

DEPARTMENT Bulletin No. 1339, U. S. Dept. of Agriculture, "The Effect of Weather upon the Change in Weight of a Colony of Bees During the Honey Flow," by James I. Hambleton, sets forth the results of elaborate experimental work that has been under way at the bee culture office at Washington for several years. Much of the data is presented by graphs to assist the reader in interpreting them. A limited number of copies of this bulletin are available for free distribution by writing to the Bureau of Entomology, Washington. The regular price at the Government Printing Office is 10 cents per copy.

Roadside Selling

THE advertisement of the Dodge Brothers Motor Car showing a motorist in the act of purchasing a jar of honey at a roadside stand, which recently appeared in the leading magazines of the country, is indicative of the extent to which roadside selling of honey has developed. The illustration showing the "Honey for Sale" sign, the jars of extracted honey and sections of comb honey, the bee hives, the half-frightened small boy, and the motorist reaching into his pocket for money to pay for the jar of honey which the beekeeper is proudly holding up before him, will be seen by millions. Beekeepers are certainly grateful to this great corporation for recognizing their industry in this way.

Hands Across the Sea

AS has already been announced, Prof. E. F. Phillips, of Cornell University, who is this year President of the international Apis Club, plans to attend the Annual General Conference of the Club in Great Britain next summer. On the occasion of such a visit it would be a gracious act for the various beekeepers' organizations, and perhaps also for individual beekeepers, to ask Doctor Phillips to extend greetings to our beekeeping friends on the other side of the ocean. We would suggest that this be brought up at the winter meetings of the various associations and the secretary of each association be instructed to write to Doctor Phillips, asking him to extend the good wishes of the association to the Apis Club at the time of his visit. Anything that we may do to increase a friendly feeling between beekeepers of the various countries is some contribution to international good will, and the Apis Club has done so much to increase international co-operation among beekeepers that their help may well be appreciated and acknowledged. May we not have greetings sent from all of our associations next summer?

Fermentation in Honey

IN portions of the clover region there was an unusual amount of red clover honey stored this season. This can usually be distinguished from white clover and alsike clover honey by a slightly darker color and a peculiar flavor resembling that of bumblebee honey. There is often also a somewhat tartish taste suggesting the beginning of fermentation. In fact, red clover honey is much given to fermentation. In some cases enough fermentation takes place in red clover honey so that it bursts through

the cappings and smears the surface of the comb. This may occur even before the honey is taken from the hive, causing the bees to empty some of the cells.

No doubt the quality of red clover honey is much better when it is stored more rapidly. In such cases it is probably mixed to a large extent with white clover honey or alsike honey without changing its appearance or flavor perceptibly. Apparently honey from any source is more liable to fermentation during poor seasons when it is stored slowly. Possibly the explanation is that more ferments are carried in with the honey when the bees must visit many flowers to get a load than when nectar is so abundant that only a few flowers need be visited to obtain a load, the foreign substances in the nectar being greatly diluted when nectar is abundant. No doubt, heating the honey to 140 or 150 degrees Fahrenheit at the time of extracting would prevent fermentation in such cases. Those who have honey which is liable to ferment should dispose of it where it will be consumed during the winter if possible, for if kept over until warm weather next spring fermentation may take place.

Feeding and Packing in December

THE month of October is usually the best time for finishing preparations for winter in the greater portion of the United States, but this season many who packed their bees and fed them, if necessary, in October were compelled to do this work in the rain or in a snowstorm. As a result of the bad weather in October and November, many who keep bees as a side-line have postponed the preparation of their colonies for winter and are now wondering what can be done to retrieve the situation.

While packing and feeding in December is by no means orthodox beekeeping, it is certainly better to do this work now than to leave it undone. If the colonies are short of stores, they can still be fed a sufficient amount to tide them over until early spring. If sugar syrup is to be fed to colonies that are to be wintered outside, the hives should first be packed if they are not double-walled; then a piece of roofing paper should be cut the right size to cover the top of the hive and as many holes two or three inches in diameter should be made in it as there are pails of syrup needed. Thus, if two 10-pound pails of syrup are to be given, two holes should be cut near the center of the pieces of roofing paper so that the feeder pails can be inverted directly over the cluster of bees. The ordinary 10-pound honey pail having 30 or 40 small holes punched in the cover makes a good feeder for this purpose, or if these are not at hand ordinary fruit-jars can be used by tying a couple of thicknesses of cheesecloth over the top after the syrup has been put into them. These feeders should then be inverted over the holes in the sheets of roofing paper or other covering of the hive. The top packing should then be put in place around the feeders in order to keep them warm while the bees take the syrup. A little of the syrup should be spilled down among the bees in order to start them at work on it. In this way feeding can be done even during freezing weather, but of course it is best to select a mild day if possible for this work. The feeders can then be left in place until the bees have taken the syrup.

Colonies that are to be wintered in the cellar can be fed even after they have been put in for the winter, although it is needless to say that this method is not to be recommended except in an emergency. The important thing to be kept in mind in feeding under these conditions is to have the feeders in contact with the cluster of bees as described above. After the bees have stored the syrup in the combs the feeders can be transferred to other colonies so that in an emergency a large number of colonies can be fed after being place in the cellar. The bees will quiet down after storing the syrup and if other conditions are favorable should winter in spite of the disturbance of feeding. In every case of late feeding, the syrup should be made of not less than two parts of sugar to one part of water, either by weight or volume.

Another way to feed colonies during cold weather is to lay a frame of sealed honey on top of the frames adjacent to the cluster, or if combs of honey are not available a slab of hard candy made by boiling sugar syrup until a candy thermometer registers 276 degrees, or until a test made by dropping a little of the syrup into cold water shows that it is hard and brittle. The syrup can then be poured into a pan lined with waxed paper to make a slab of convenient size.

The Five-Pound Honey-Pail

ONE of the most discouraging problems in the merchandising of extracted honey in the United States is the great difficulty in inducing consumers to purchase honey in the 5-pound and the 10-pound pails instead of the smaller packages in glass. It has been a long-cherished dream of many producers and dealers that the 5-pound pail

shall some day become the standard package for extracted honey and that this will be the means of inducing the American people to look upon honey as a staple article of food instead of as a luxury, as too many do at the present time. The larger package suggests the use of honey in quantity as a food, while the smaller and more expensive package puts honey in the class of delicacies or in the class of medicine. It was with this in view that the questions sent out to our market reporters ask for reports in terms of 5-pound pails, when honey is sold to retailers or at retail to consumers. It was hoped that this would at least suggest putting greater sales effort behind the larger package even in localities where but little if any honey is sold in that way.

Honey has been sold in limited quantities in different-sized pails ever since extracted honey has been on the market, and large sums of money have been spent by dealers in various attempts to merchandise honey in this way; but progress in establishing the larger package has been disappointingly slow.

However, the picture has a brighter side. Slowly but gradually the larger package is gaining ground. Evidently the effort and money that have been spent by producers and dealers in the attempt to popularize the larger package has not all been wasted. Progress in this direction is largely the result of direct sales by producers or by local dealers who are able to explain the advantages of the larger package to the consumer. In merchandising honey through the regular trade channels the glass package has been necessary, for in this case the package must present the sales argument, while in direct sales this is done in person. No doubt roadside selling has been a large factor in bringing about the progress that has been made in selling honey in larger packages.

The 5-pound pail is apparently the most popular size for honey. It is large enough to suggest to the consumer that honey should be a staple food, and small enough to leave a taste for more. In the West 60-pound cans are often sold to farmers, and in producing centers many 10-pound pails are sold; but in the East and especially in the cities the 5-pound pail is more satisfactory. It often happens that the people who buy a larger package do not buy again, while the smaller package leaves a taste for more.

The 5-pound pail is making the greatest progress in smaller towns and agricultural districts and among workmen in some of the large factories, such as the automobile factories in Detroit. It is making the least progress in the fancy trade in large cities. Let us hope that the time is not far distant when the 5-pound pail shall be a standard and well-known package in the great majority of grocery stores in the country.

The Five-Ounce Jar of Honey

HONEY producers have felt so keenly the need of merchandising honey in larger packages that some have taken the extreme view that it should never be sold in small packages. An example of this is mentioned by Fred Leininger on page 798 in this issue.

Such an extreme view is probably based upon the notion that the sale of a 5-ounce jar of honey will take the place of the sale of a larger package. The experience of large dealers in honey as well as in other food commodities indicates that the opposite is true—that, instead of taking the place of a larger package, the 5-ounce jar is sold largely to people who would not buy the larger amount, and that it acts as an entering wedge to open the way for the sale of a larger package. It is surprising how many people make their first purchase of honey by buying a 5-ounce jar to make cough syrup, or to take along to a picnic dinner, and, after finding how good it is, are led to purchase a larger package. In the cities, the 5-ounce jar is often the best seller among certain classes of consumers. Although it is an expensive way to purchase honey, the price does not prevent the sale of several million jars annually. It is looked upon by dealers largely as a means of introducing honey to new customers and inducing them to buy the larger and more profitable packages.

Furthermore, in selling honey, as in the merchandising of any commodity, no outlet, however small, should be neglected, since the aggregate of several small outlets will help considerably in disposing of the nation's honey crop. There is probably a total equivalent to between 50 and 100 carloads of honey in bulk that is sold in 5-ounce jars every year in the United States. Most of this is sold in the larger cities. No doubt at least 50 carloads of honey are thus disposed of to consumers who would not have purchased any honey if the 5-ounce jar were not offered. If these 50 carloads of honey were left in the hands of the producers instead of being disposed of in this way it could not help but have some effect upon the honey market, to say nothing of the advantage of introducing honey into hundreds of thousands of homes by this means. Many packers of food products find it profitable to give away samples of their products in order to make sales later.

WINTERING WITHOUT LOSS

By Francis Jager

Professor of Beekeeping, University of Minnesota

Plain, Simple Directions for Carrying Colonies Through Winter in Their Full Strength and Vigor

Wintering of bees was a gamble only a few years ago, and is still a gamble with beekeepers who are not posted. But a symposium of research by the Department of Agriculture, in Washington, by some fifteen universities, and by a number of professional beekeepers has cleared the wintering-problem atmosphere so far that today we may with certainty predict in the fall how our bees will come through to spring, barring landslides, floods, earthquakes, fires, and the like. The fundamental principles in successful wintering of bees may be stated thus:

A bee just emerged has a certain amount of vitality which, like compressed air in a boiler, may be blown out quickly or released slowly; but when the vitality of the bee is all gone the bee is dead. Going into winter quarters, bees must have an amount of vitality or life energy inherent in them sufficient to carry them far into spring, and this vitality must not be spent or dissipated during the quiescent period of winter. Since no young bees are reared from September to April, we must keep alive until spring the bees we have in the fall. Observations show that the last bees to emerge in the fall (with a full amount of energy) will live seven to nine months, or until next May or June, provided there occurs no abnormal or unnecessary waste of vitality during the winter. Nature has left a safe margin, however, and the bees will pull through with a waste of 10 to 30 per cent of vitality above the normal. When perfectly contented, there is no abnormal loss at all and they may live until July.

Wintering of bees, therefore, begins with the last emerging bees in the fall, or in August and September. From that time on the energy of bees must be preserved and saved. The vitality of bees is burned up by bodily activity, which never ceases entirely. Normally, their bodily motions and functions are slow, quiet, contented, and their vitality is lost very slowly. If, for some reason, their motions and functions become excited, rapid, and fussy, their vitality is lost very fast. In the first case the bees will live far into spring, while in the second they will die early, either before or shortly after taken out of the cellar.

The wintering question resolves itself into this: How can I keep my bees young, quiet, and contented from September until spring? The answer is: By giving them what they like and taking away what they don't like.

How to Keep Colonies Satisfied in Winter

Let them have a young queen. Bees with old queens ready for supersedure are "crabby." They are consumers of vitality. Moreover, an old queen stops laying early in September, whereas a

Professor Jager's apiary, apiary-house, and bee-cellar. The cellar is built of reinforced concrete, the ceiling being covered to a depth of five feet with dry earth.

young one may lay until October. The average total of energy on November 1 in colonies having young queens is, therefore, greater than in colonies having old queens. They have a larger supply of vitality for the winter.

Let them be strong in bees. They should cover at least seven or eight frames when clustered. It is a great strain on a small colony to keep warm on account of rapid heat radiation from a small cluster. It means much eating, moving around, muscular exercise, wasting of energy, and early death.

Let them have plenty of good food of the right kind, in the right place, at the right time.

It has been learned from experiments that "plenty" to last until fruit bloom means 35 pounds of food. A 10-frame hive with a tin cover will weigh about 70 pounds on November 1 if it weighed 80 pounds the last part of September. If they are short of that weight, they must be fed sugar syrup. Feeding, however, is a bad practice, especially late in the fall —it saps the bees' energy and vitality for wintering. It should be restricted or avoided altogether if possible.

To avoid feeding, remove all supers by August 1 at the end of the white-honey flow. Thereafter the bees will be forced to store fall honey from asters, goldenrod, Spanish needles, and remnants of clover in the brood-chamber, which will ordinarily be ample for winter. Of the 35 pounds of winter stores the bees will consume seven to eleven pounds during the winter. The rest will be used for brood-rearing in the spring.

The Right Kind of Food

Honey is the right kind of food. All this talk that fall honey will kill the bees in winter is not worth consideration. All honey is good, though some kinds may be a little better than others. It is honey-dew which kills. The bees gather it in the fall and mix it with fall honey. In this case fall feeding with syrup is imperative.

Honey-dew contains a large amount of indigestible matter. The bee's large intestine is made by nature to hold an accumulation of five to six months' refuse matter. When a colony consumes 10 pounds of pure honey during the winter the large intestine is of ample size to hold all waste matter without any uncomfortable feeling on the part of the bee; but when the bees eat honey-dew the intestine is full by the middle of winter, resulting in pressure, discomfort, diarrhea, discontented bees, waste of energy, and early death. The same thing will happen when bees eat too much of the good honey (15 pounds or more) on account of cold, dampness, disturbance, or thirst.

To keep honey-dew away from bees, feed 10 pounds of well inverted sugar syrup late in September. The bees will store it below their doubtful capped fall

While Professor Jager's apiary house was built for business, it also has a touch of beauty which is heightened by the well-arranged shrubbery and well-kept surroundings.

stores, and eat it first in the winter because it is below the fall honey. They will winter perfectly on invert sugar syrup; but very thin honey fed late in the fall is nearly as bad as honey-dew.

Food Stored in the Right Place

Bees are contented only when they cluster on the empty portion of the combs below the honey stores or even below the combs. But how can they cluster below their honey stores and not on them when a strong colony clustered covers seven to eight frames and an additional seven frames are needed to hold 35 pounds of honey? A strong colony and 35 pounds of honey need 14 frames of combs in order that bees may have room to cluster below the honey, and not in the cold spaces between honey-combs.

We make them contented by giving them a 3-inch rim under the brood-chamber by September 1 to give them clustering space, into which they retire from the honey stores, to the lower empty cells, and hang down into space. They like it and it preserves their energy.

Instead of a rim below the brood-chamber, a shallow super filled with honey (a food-chamber) may be placed on top of the brood-chamber, leaving only a little honey in the frames below, thus giving the bees the necessary dry clustering space on vacant comb. The bees need one or the other, but you can not keep a strong colony contented in a brood-chamber filled with honey.

Feeding at the Right Time

The winter nest of bees can not be spread, split, or disarranged with impunity. It is like the brood-nest in spring, about which the orthodox teaching is that it should not be interfered with. Whether adding combs of honey or feeding syrup, it ought to be done early, when the prospects are for two weeks of warm weather, during which time the bees may arrange their stores to their own liking. When bees get sluggish and drowsy, or have formed a cluster late in the fall, they are not fit to be fed. Moreover, winter stores should consist of capped stores. If syrup is fed it takes some three weeks of warm weather before the cells are nearly all capped over. Many grievous mistakes are committed by late feeding.

Let them have proper temperature, ventilation, and humidity. We know very well that bees are not contented in variable temperatures, in foul air, and extremes of humidity. It means too much expanding, breaking of cluster, flying out, eating, reforming the cluster, motion, excitement, and wasting of energy.

The exact temperature for best wintering varies between 40° Fahrenheit for strong colonies, and 46° for weaker colonies, 42° to 43° being a good average. Above 46° the bees break the cluster; below 40° they eat too much, so both are bad.

Checking the weights of the hives as they are put into the cellar and again when they are taken out in the spring gives a record of how the bees winter.

Winter Protection

To keep from the bees the rigors of winter, keep them contented and save their vitality. The colonies may be packed early in wintering cases outdoors. I am not going to describe them since they have been described again and again in Gleanings. The advantage of winter cases is that bees may be packed early (October 1), before cold weather makes them uncomfortable, and may be left packed late into spring (May 15) to es-

The cellar entrance after a Minnesota blizzard. The bees inside are quiet, comfortable, and contented.

cape the wind and cold of early spring. This means contentment and saving of vitality. On the other hand, packing also allows quite a variation of temperatures inside corresponding to wind and weather changes outside. The same rule will apply to double-walled hives. From both, bees emerge in the spring with a good balance of energy, if other conditions besides temperature are right.

The most common way to winter bees "up north" is the cellar method. Some day our southern friends may also winter their bees in cellars to prevent dwindling, useless brood-raising, and consumption of stores. At present bee cellars are built under ground, in the side of a hill, or half above and half below with a dirt bank up to the rafters. A bee cellar may some day be built above ground, with 18" chaff-insulated walls and ceiling, and equipped with refrigerator doors as well as with electric automatic heat, ventilation, and moisture control.

The man with a large apiary will find cellar wintering the most economical in equipment, time, and labor. Improvised cellars in basements of buildings may or may not be good wintering-places, according as they may be made to conform to conditions essential to successful wintering. Special bee cellars built for bees only are also a waste of money unless they are built right. A good cellar must give the bees a constant temperature of 40° to 46° F., good ventilation, and right humidity. In addition it should be dark and free from disturbance.

An Ideal Bee Cellar

Allow me to describe a cellar for 400 colonies in which I know that no normal colony has perished in five years.

It is dug as a tunnel into the side of a clay hill. It is 55 feet long and 11 feet wide, with a 5-foot vestibule in front. However, it should be 12 feet wide. The floor is of creosoted wooden blocks, the walls are 8-inch reinforced concrete, and it has a six-inch ceiling of rod-and-wire-reinforced concrete, slightly arched. The outside walls and top of ceiling are painted with asphalt. There are two six-inch pipes running under the floor, with one six-inch opening in each corner of the cellar. They connect with the fresh air outside. There are two one-foot top ven-

A recording thermometer gives a record of the temperatures in the cellar for every minute of the time during the week.

tilators, one at each end of the cellar, extending three feet above the ground. The cellar is covered with clay soil to the depth of five feet, clear to the retaining wall at the entrance. The two doors are three-ply and insulated. The hives are placed in four rows, two next to walls, and two in the center, back to back. They are piled four high. The strongest colonies are placed at the bottom, the others on top. The cellar doors are left open until cold weather sets in.

A temperature-recording thermometer (see illustration) suspended midway between the ceiling and the floor shows a temperature of 42° to 43° F. through the winter with all ventilators open. Outside

changes in temperature do not effect the cellar in the least.

The cellar is not bone dry, nor is it dripping wet. The proper humidity for bees appears to be just below the condensation point. As long as the air in the cellar moves and is not stale and dead, there is no danger of mould or condensation at 42° F. in this locality; and if the hive-entrances are wide open there will be no mildew or moisture in the hives, no matter how great the amount of moisture given off by the cluster. An absorbent cover over the hives in winter has been discontinued. The summer covers are left on hives, but the ⅞-inch entrance is left wide open.

Getting Bees Ready for the Cellar

After the winter batch of brood has emerged in colonies in the late fall the bees are not disturbed. Feeding, if needed, is done when there are no more larvae in the hive towards the end of September. Perfectly inverted syrup, 80 per cent invert sugar and 20 per cent water, is fed, which the bees store and cap over at once, with least loss of energy. No smoking, hauling, uniting, etc., of bees is done after that, since this would reduce their vitality for winter.

Waiting to put the bees into winter quarters after the last cleansing flight is a fallacy. The time to put the bees away is the first cold spell in fall, in the North at the end of the so-called Indian summer. To wait for that "last flight" is to confess that one has allowed his bees to suffer such cold that they have already overeaten until their bowels are so full that they need a flight. Why not put them away before they are compelled to gorge themselves with expensive honey, and before they need a flight? Nothing is gained by leaving them out, and precious bee vitality is sacrificed every cold and windy day in late fall. The idea of storing the bees away in October may be worth investigating; with us it is a principle. How many articles have you read about spring dwindling and its serious results? The bees begin to dwindle right after brood-rearing in the fall. October is as bad a dwindling month as April. The sun coaxes them out, and the cold keeps them out. Many strong September colonies go into winter quarters in November as weaklings because they have had too many "last cleansing flights." These cleansing flights do clean the hives of bees for sure.

Two men with a carrier and shoulder strap are the easiest means for carrying the bees into the cellar. A cold dark day is best for putting them in. Handle the hives gently. Don't disturb the bees, and never use smoke. The cellar doors are left open after the bees are taken in as long as the weather permits. During the winter the chart on the recording thermometer is changed every Saturday afternoon, and a general observation is made to see that "all is well" for another week.

St. Paul, Minn.

THE RACES OF BEES

By Phillip J. Baldensperger

The Native Bees of India and the Orient. The Place of Origin of the Honeybee

Apis indica, Fabricius. According to Benton, 1881, this bee is found all over the Indian islands and the Dutch possessions in the East Indies, where they are found wild in hollow trees or rock clefts, in which they build parallel combs like those of *Apis mellifica*.

J. C. Douglass, in his "Beekeeping for India," 1884, says: *Apis indica* is very generally distributed all over the plains of India, the slopes of the mountains, and on the plateaus. It thrives wild in Bengal, where the weather is relatively warm all the year round, and at altitudes having frost and snow in the winter. The several varieties of this species differ in size and depth of coloring, and it seems probable they differ in temper."

There are 36 worker-cells to a square inch instead of 29 built by *Apis mellifica*, and the normal combs are three-fourths of an inch thick, instead of seven-eighths, as are those of the European bee. This approaches in size the combs built by bees found in Syria and Palestine.

The abdomen is yellow underneath, while the anterior part of each segment (except the tip, which is black), is orange-yellow, and the posterior part is brown, covered with whitish-brown hairs. The thorax is covered with brownish hair, and the shield or crescent between the wings is large and yellow. The queens are large in proportion to the workers, and are quite prolific. They have leather-colored or dark rings. The drones are slightly larger than the workers, and are blue-black, with no yellow, their wings changing hues like those of wasps.

The number of queen-cells may vary from three to thirty, and several swarms may go out, sometimes four or five in a season. Naturally *Apis indica* swarms to such an extent that many stocks are lost

during the winter from cold and starvation.

In the hills there is abundance of wild pasturage; on the plains, millions of acres under cultivation offer to the bees abundance. Though the combs of *Apis indica* are naturally built about five-sixteenths of an inch apart between the faces of the comb, the bees build readily out to the thickness of comb-honey sections, or 1¾ inches. As to productiveness under the best system of culture, the data available are very limited, but apparently ten to twelve pounds per colony is considered a fair yield. Being so small and quick these bees are not readily avoided. They differ in excitability according to the season. For some purposes smoke has to be used plentifully when the bees have to be driven from comb to comb, or when they are more than usually inclined to sting.

The old system of beekeeping has been carried on by the people over almost the whole of India, where they are kept in logs, earthen vessels, or any other natural or artificial hives. In the Khassia and the Jamtia Hills, all along the Himalaya slopes, in Cashmere, on Lower Bengal, in the Madras Presidency, bees are kept in logs, tubs, earthen vessels, holes in the walls, etc., but more commonly than is generally supposed. The varieties found on the plains are lighter in color, and varieties found in higher regions have darker bodies and a very marked dark-brown coloring of the wings.

Douglas says: "Foul brood is the most serious disease." Its existence in Bhutan was reported in 1884.

The Tonkinese Bee

Apis indica, var. *sinensis*—a dark bee living in and about Hanoi, in northern Tonking, was reported to the writer in 1896. Mr. Faraut, Chief of the Agricultural Station, said there were several kinds, and that all of them do not gather enough honey to make it worth while to keep them. Mr. Faraut pointed out also the giant bee of India, without indicating which variety it was. On one of his visits to Nice at the end of the last century, he took two colonies of French provencales with him, but the bees did not thrive for want of sufficient food, and probably from insufficient knowledge on the part of the proprietor to care for them through dearth, and feed them up early enough to have strong colonies for the honey flow.

Other Asiatic bees have had their origin in this Eden. As little is known about them, simply naming them may suffice. They are the African-Indian bee (*Apis mellifica*, Koshewnikowi); the Java bee *Apis mellifica javana*); the Pitch bee (*Apis mellifica picea*); the Chinese bee (*Apis mellifica sinensis*); the Japanese bee (*Apis mellifica japonica*).

The Pygmy or Little Bee

Apis florea, Fabr. On account of the small quantity of honey produced by the "little bee," it has not been very particularly taken into consideration. The tiny colony which Dathe brought to Jaffa, Palestine, in 1885, was lodged on a very small log of a tree when the writer saw it fed on sugar syrup.

Benton, who saw the pigmy in Ceylon, wrote: "The comb is only about the size of a man's hand, and is exceedingly delicate, there being on each side 100 worker-cells to the square inch of surface. The workers, more slender than house-flies, though longer-bodied, are blue-black in color, with the anterior third of the abdomen bright orange."

C. C. Ghosh describes the little bee in Bulletin 46, Agricultural Research Institute, Pusa, India, as follows: "It is the smallest known species of the genus, and builds a single comb, usually not larger than the palm of a man's hand. The bees will build on bushes or branches of trees, or under eaves of huts and cornices of buildings and walls, even in ventilator holes of houses, and behind doors and windows. In the last-named situations the comb is built parallel to the wall in such a way that it does not interfere with their opening and closing. The bees are not prone to sting, and have been styled "stingless" by several writers. Actually they do sting, and cause swelling, though the injury is not as painful as that caused by the bigger bees. They gather very small quantities of honey, a single comb yielding only a few ounces. As the Indian rock bee and the little bee are lovers of the open air, they can not be kept in enclosed boxes; also, they build only single combs, and are, therefore, not adapted to hives."

Giant or Rock Bees of India

Apis dorsata, *nigripennis*, Fabr. and Latreille. The giant bees of India had been known as the largest comb-building honeybees in existence for a very long time. It was not till 1880 that Frank Benton started to India to import this bee into Europe and America while he was stationed at Beirut. Uncertain about her whereabouts, he went as far as Java, where he was advise to return to Ceylon. On his landing at Colombo he learned that among the "Gallas," or rocky cliffs in the interior of the island, there were the Ra Galla, till he struck the Bamb-Ara-Galla, or great bee cliff. With the help of Singhalese natives he also found swarms hanging high up in the palm branches. While he cut down the brood-comb into his frames, and discarded the

drone comb, the natives feasted on drone larvae.

Benton stated that those bees build single but huge combs, often five to six feet in length and three to four feet wide. The natives, who dreaded the stings of the bees, had built huge fires at the foot of the rocks. The rising smoke, it seems, quieted the bees, for he could handle them and put them into his hives as easily as any other species of bees. The old legend of these bees attacking furiously ceased.

The queens, workers, and drones hardly differ in size, nor do they vary much in color. Excepting the first and second segments of a slight yellowish color, the bees have a dark-blue tint all over as well as on the wings. The queen is distinguished at first sight only by her slightly tinged yellow legs, and the drones by their longer antennae and broader abdomen. The worker and drone cells are of precisely the same size, so that very likely a very small proportion of drones is raised in the swarming season.

Unhappily, during his return journey from Ceylon to Beirut with the four captured swarms, Benton became ill with malarial fever contracted in the jungle, and was brought back to the hospital at Beirut. When he recovered, the bees, which had had no one to care for them, were dead. Two years later, R. Dathe, of Eystrup, Hanover, followed the steps of Benton and arrived in Jaffa with his four swarms of giant bees in 1883. Dathe made hives with two sides open to give the migratory bees more liberty, and tried to have them build their own comb on frames with starters. The bees, seen at the time by the writer, simply refused to build cells, and would desert the hives occasionally. They accepted food, and clustered to build wax, but invariably they would drop the tiny scales of wax exuded by them to the bottom of the hives. The bees accepted very close inspection, and allowed themselves to be taken from the cluster. On a single occasion an irritated worker flew at my ear and fumbled about in a very clumsy way to sting. The sting was not half as painful as one inflicted by the small Palestine bee, though the dorsata workers are bigger than full-sized laying Italian queens. The second attempt to domesticate the bees entirely failed.

On his second voyage to Asia for the Department of Agriculture, Benton found these bees up in the Himalaya range, whither they migrate during the very hot summer months of southern India to return to their homes a few months later; but he did not succeed in securing any, nor was anything of particular interest attained. Two other varieties of the giant bee inhabit eastern Asia—*Apis bicolor*, in Tonkin and Borneo, and *Apis dorsata zonata* in the Philippine Islands. They all migrate, and are supposed to return to their original combs in autumn. This, however, can hardly be credited.

Individual colonies, destroyed by Indian honey-peddlers, are said to have contained up to 60 pounds of honey. When migration begins, every swarm will abandon the brood and the little honey that may remain, and fly off to cooler regions. Nothing can retain the swarm then. Indian treatises and bulletins published by the Agricultural Department of the government of India hardly more than mention the migratory giant bee, so that it appears no attempts have been made to domesticate them, even in their native country.

According to C. C. Ghosh, Assistant to the Imperial Entomologist, sixty pounds of honey has been obtained from a single comb of *Apis dorsata*. Wild tribes collect their combs by burning away the bees, usually at night, some making it a profession to collect their combs. The honey is squeezed out, and then the comb is melted into wax, each comb (on account of its size) yielding a large quantity. The beeswax exported out of India is principally obtained from the combs of the rock bee. The Forest Department of India realizes a large revenue annually by leasing the right to collect the combs from forest areas.

No doubt this industry of collecting honey and wax was known to the early inhabitants of Hindoostan long before Egypt had known the bees headed by a monarch, as they supposed, which they symbolized to represent the Pharaoh, and long before these industrious workers were known in the valley of the Nile. The more poetically inclined inhabitants of Hindoo Koosh, where the Vedas originated, where the Sanskrit language was formed, knew the "blue bee" and its sweet products.

Vishnu, proceeding from the Godhead Brahma, is represented as a blue bee (probably *Apis dorsata*), dipping his feet in the honey of a lotus flower. The Hindoo deities are called in Sanskrit "Madhara," or "nectar-born," and a bee is known as "Madhucara," which means "honey-maker," also "Brahara," the wanderer, indicating the habits of the giant bees to emigrate occasionally. Turanians and Aryans, who also migrated from the Himalaya regions toward the west, and were the ancestors of the Turks and Teutons, carried along with them the language and legends of their native

country. The bee in Turkish is called "ara," from the Sanskrit root, while the Tuetons retained the prefix "mad," or "meth," and the English "mead," because they had a very pronounced taste for that drink made of honey.

The migratory bee, thousands of years before the attempt of Benton and Dathe, would not follow the Aryan tribes, but returned to its cliffs and giant trees. The same can not be said of the smaller species, *Apis indica*, of yellow and dark color, which was modified in the long journey, and during those thousands of years, to *Apis mellifica* of Europe. The German "Bien," the English "bee," or the French "a-beille," are all of one origin. We may safely conclude that honey, mead, bees, and the art of cultivating them have originated in the biggest bee center known, where different species and races still exist—Hindoostan.

LARGE-SCALE HONEY PRODUCTION

By E. R. Root

The Story of a Modest Man Who Comes Near Beating All Records in Rapid Development

During the month of October, equipped with notebook and camera, I visited one of Canada's most extensive honey-producers. I had known of E. H. Hodgins and had been told of some of his extensive bee operations, and went prepared to believe most of what had been told me; but as I talked with the man, saw what he was doing, looked over his equipment and his apiaries scattered for miles and miles over western Ontario, I said to myself, "Will anyone believe this story when I write it up?"

The actual facts become the more remarkable when it is understood that this man, without any previous experience, deliberately bought up a lot of colonies of bees in 1918 and, wonderful to relate, made them produce honey the first year. He not only did that, but continued to produce honey and make increase until he is one of the most extensive if not the most extensive beekeeper in all Canada, producing honey by the carload.

He was not wedded to any old-fashioned ideas because he did not inherit any old equipment, except a little that he had bought, and so was free to adopt that type and system of management which he thought would give him the best results. He studied carefully all the modern books and papers, visited beekeepers, and then, when he had made up his mind, bought brand-new equipment—the very best he could find—and began beekeeping in real earnest.

He had the advantage of most men who start in the business in that he was a business man of some experience, first as a merchant, and next as a banker. When his health failed he was compelled to seek some means of livelihood that would keep him outdoors. After he had made a careful survey, he decided on beekeeping right in his own home locality, the hills and valleys of which he knew to perfection. When you think about his amazing growth in the business, bear in mind first, last, and all the time, that his early training in business and then in banking had given him a splendid foundation for going into a new line of industry.

System and Equipment

After making a complete survey of equipment, Mr. Hodgins decided upon ten-frame Langstroth hives of the very best quality that he could buy. He came to the definite conclusion that this was no experiment and that each hive-body when full of honey was about as much as any one man could lift or handle.

He next decided that he would use double brood-chambers or two full-depth Langstroth hive bodies for the queen durin the heavy breeding period. He became convinced from his reading that a colony with from seventy-five to a hundred thousand individuals is the kind of colony that he wanted to have, and he did not believe that he could get such a colony without having a brood-nest that would accommodate the most prolific queen under the most favorable conditions and still leave room for more extension of brood if necessary. That his decision along these lines was a wise one is shown by the big crops of honey that he has been securing every year—not in one apiary, but in dozens of apiaries scattered over a territory that is so thickly covered with his bees that no outsider could possibly squeeze in.

He uses no queen-excluders, allowing the queen to have full range of two stories. This fact, he says, has practically eliminated all swarming in all of his out-yards, and all labor of putting on the queen-excluders, or spreading brood, for the colonies are left with scarcely any change from late fall until almost the beginning of the main honey flow.

He believes absolutely in the idea of a food-chamber, which has been advocated in these columns, and with all of his extensive operations he does little

or no feeding of sugar syrup. He leaves plenty of honey on the hive, and this one fact, he believes, is more important as an absolute insurance of a honey crop for the next year than anything else he knows of. It is insurance likewise, he says, against heavy winter losses. He agrees with what A. I. Root said, that it is all folly to extract all of the honey down to the mere brood-nest and then go to the expense of buying sugar and feeding the bees until they are supplied with stores equal to the amount of honey that had been taken away.

Then, again, Mr. Hodgins believes that, pound for pound, natural stores go much farther than the sugar stores. He says that, when they are of good quality, they are just as good for wintering as sugar and a great deal better for breeding in the spring.

He so manages his operations that he has eliminated feeding, eliminated going

Mr. Hodgins' two-colony winter case. No more of these are being made, tarred paper being used instead.

through the brood-nest, and eliminated a lot of unnecessary operations that many beekepers think important; but he watches carefully the operations of his queens. If a queen begins to fail, which he can determine by the appearance of the entrance and a mere glance over the frames, she is replaced with a good one.

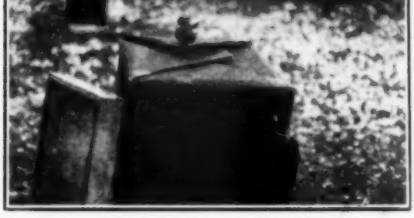
The Hodgins Method of Wintering Bees

It was a cold, raw day, with some snow falling, when I took a few pictures, and the pictures accompanying this article show the initial preparation for putting his bees into winter quarters. You will notice that he wraps one thickness of common tarred paper around the hive and then nails on a strip of wood to hold it at the point of overlapping. This paper is folded somewhat loosely in the first place to allow a slight amount of packing in the form of planer shavings around each of the sides and ends, and more packing on top. The whole thing is then folded up something like a grocer's package, and last of all the regular hive cover is put on top.

This work of folding tarred paper loosely around all the hives is done early in the fall, and when the weather becomes a little cooler he lifts the cover off, unfolds the tarred paper at the top, pours planer shavings down around the sides and ends, then puts a liberal supply of planer shavings on top.

It will be seen from the foregoing that there can not be a large amount of packing. I was somewhat surprised at this and asked why he did not provide for more packing between the hive proper and the tarred paper. He replied by saying that it was not necessary for his climate. "But your temperature must at times go down to between twenty and thirty degrees below zero," I said.

"Yes," he said, "but we have deep snow that piles up around the hives and on top of them sometimes, and this snow makes excellent winter packing. All I attempt to do is to put just enough pack-



Tarred paper is wrapped around the two-story hive and folded in place at the top.

ing between the tarred paper and the hive so that the snow does not come directly in contact with the hive wall itself. I put more packing on top because sometimes the snow is not quite deep enough to cover the tops of the hives."

"But," I said, "suppose you have a winter when you don't have very much snow?"

"We have never had such a winter and never expect to have one. This country has deep snows all winter, and that is one of the reasons why the locality is good and why the bees winter well here, even without any packing whatsoever."

He then cited instances of some neighbors who used no packing, but left their hives out all winter and whose bees wintered comparatively well.

"Then why do you use any tarred paper at all," I asked.

"Because," he replied, "I want to keep the snow away from direct contact with the hive itself. By putting just a very little packing—about an inch thick—between the tarred paper and the hive walls, I insulate the hive enough"

It will be noted from the photographs that Mr. Hodgins also uses a two-colony wooden winter case. He had a large number of these made up when he began his work in beekeeping. While they worked all right, they are expensive and it takes about as long to pack the bees in these more expensive winter cases as it does in the simple cases made of tarred paper, which is thrown away in the spring. Taking it all in all, he will not make up any more wooden winter cases, as he finds it far cheaper to buy tarred paper every year and then throw it away. It takes less lifting and handling of the colonies of bees and requires but little effort to wrap the paper around the hives.

I asked him what his winter losses have been. He answered by saying, "When I have stores enough on the hive (and that is the thing that I look out for very carefully) and when I have the hives packed in tarred paper cases, such as you see here, but with the addition of planer shavings around the side walls and on top, my losses do not average much above 10 per cent. In some cases it goes as high as 20 per cent."

Too Much Packing Sometimes Too Much of a Good Thing

He then mentioned one yard where his losses were very heavy, and the strange part of it is that the bees in this yard were the best protected for winter of any yard he had. I asked him to what he attributed that loss.

"I don't know, but I think too much snow and too much packing. The snow is piled so deep over the hives that the bees do not get sufficient ventilation, become uneasy, worry, and begin eating their stores, with the result that they soon develop dysentery. For that reason there may be such a thing as too much of a good thing in the way of packing."

It should be kept in mind that snow itself is a protection. Indians have a way of digging into the snow when it is forty to fifty degrees below zero, rolling into their blankets and pulling the snow over them, where they sleep and keep warm all night. The average white man in trying to fight off the blizzard would struggle on and on until he would freeze to death. The Indian knows the value of snow as protection, and Mr. Hodgins has also discovered this. Then he said, "I don't want too much snow and I don't want too little."

He is now trying again the experiment of packing this yard with the tarred paper only to keep off the dampness from the hives, and he is expecting better results.

Winter Entrances

Mr. Hodgins contracts all of his entrances to ¼ inch deep by about 8 inches long. He said that if he did not have snow he doubtless would adopt the one-hole entrance an inch or two above the bottom-board. One reason why he does not have bees suffocate, I suppose, is because it is so cold that the snow does not

The tarred paper is put on the hives early in the fall, then later the folds at the top are opened and planer shavings poured in at sides and top. The paper is then folded back in place and the regular hive cover put over it.

melt and freeze around the entrances. The snow is loose and fluffy, allowing the air of the hive to pass out and fresh air to come through the entrance into the hive, otherwise there is no doubt that there would be very severe losses.

Summary

In the way of a summary, let us see what are some of the secrets of Mr. Hodgins' success. First, last, and all the time, he is a business man and uses business methods in the management of his bees. Second, he has the very best equipment that is obtainable—every hive, every frame, and everything else that goes into his yards fits. Third, he avoids all unnecessary labor in the way of tinkering with the bees and going through the brood-nest in the spring and fall. He does this by giving his colonies plenty of stores in the form of food-chambers in the fall, giving them, if anything, more honey than they will actually use, and then forgets all about them for nearly six months. In this way he saves the cost of sugar, making the syrup, and feeding, which with him would involve an enormous amount of expense and labor. The giving of a food-chamber of natural stores is a simple matter. Fourth, he goes with his help to each yard and oversees and directs everything that is done. Fifth, he has a sister and father who are a great help to him. The former superintends the extracting work at "the plant." Women are cleaner than men in a messy job of this kind. His father is his right-hand man, and when he can't go himself to the yard it is the father that furnishes the brains for the work. Sixth, his extracting plant is a model, and with a sister, who is as capable as he to boss the work, he has no responsibility for getting the honey out of the combs. Seventh, it is a sort of family affair that knows no rivalry, but in which all work together for the common good.

Locality

I am convinced that this locality, though good, is no better than most other localities in Ontario, Canada; and it is only fair to say further, to protect Mr. Hodgins and anybody else who is in the bee business seriously in Canada, that his territory is thoroughly covered with bees. He keeps every square mile within range of his bees overstocked, if anything. In my judgment it would be impossible for an outsider to come and start competing with him or trying to divide his territory, because it would take him a year or two before he would begin to learn some of the peculiarities of the locality.

NATION-WIDE ADVERTISING

By F. B. Moore

Some Reasons Why it is Not as Yet Practical for the League to Attempt Advertising Honey in this Way

Once in a while we come in contact with men who have thought through on a subject so thoroughly that their advice and counsel are well worth heeding. Such has been the experience of a committee member of the American Honey Producers' League.

Mr. B. F. Kindig, president of the League, in seeking among our membership for a chairman for the advertising committee, singled out Mr. William A. Hunter, of Terre Haute, Indiana. During the time Mr. Hunter was considering the acceptance of this office he wrote several letters to members of other committees of the League. It is upon the sound business judgment expressed by him in these letters, and upon his stand against a national advertising campaign under present conditions, that we wish to comment.

Caution, apparently, is a fundamental virtue in Mr. Hunter's makeup. That he has given much time and thought to marketing and sales is easily seen in every line of his letters. He seeks first to know what the policy of the League has been in the past; what type of beekeepers form its membership, and how many. He wanted to know whether the League desired to inaugurate a national advertising campaign, or was to limit itself to a national honey week. Then he asked about a uniform container and a standard label.

How Trade Names Are Established

For the reason that it takes a number of years to fix in the minds of the buying public a trade name, or trade-mark, and for the reason that such trade-mark, under the present organization, would be uncontrolled, and subject to abuse, and would not have the backing of a financially sound and competent organization which should make good on a money-back guarantee of quality, he is emphatically against spending money for national advertising, or permitting the use of the League emblem. He says:

> Certain fundamental merchandising principles must be strictly adhered to in whatever is done by the American Honey Producers' League executives, to avoid disaster. The advertising committee is called upon to handle the most important factor in successfully merchandising a food product, and it is compelled to enter into direct competition with every other advertiser of food, to say nothing of the

innumerable advertisers constantly before the buying public for not only necessities of life, but luxuries of all kinds. Every advertiser is making an appeal for the consumer's dollar, and only the most expert are successful in making publicity pay satisfactory returns. Big corporations that control the nationally advertised food products, are in a position to employ the best of talent and keenest minds in preparing and executing their national campaigns. * * * *

The League never will accomplish maximum results until it has the beekeepers' products properly prepared and distributed, as well as backed by an unqualified money-back guarantee. Anything of merit can be successfully advertised and sold at a profit, but commodities without superior qualities can not be successfully marketed. The initial order invariably costs more than the goods sell for, but the repeat orders are the ones to be depended upon to cover the cost of production, expense of doing business, and profit. Repeat orders can not be depended upon unless the goods we are selling are of a sufficiently high quality to create an appetite for more.

Conditions Under Which League Label Should be Used

Mr. Hunter says further that under no circumstances should the League consent to the use of their emblem or label until there is some supervision over the packing and distribution, with an absolute control over the quality and purity of the contents. The label, he explains, will have no value until the public understands that its guaranty is equivalent to the money invested in the goods sold under its name, and that redress is immediate and without argument upon the return of the article purchased. The mere printing of the guarantee upon the label is of little value and leaves the matter up to each individual beekeeper, which method, he thinks, is unreliable.

Mr. Hunter has a practical idea of advertising and sales. His letters are convincing. He is to be commended for his insistence on a uniform high-grade product in neat, uniform containers, to be backed by an organization financially sound and competent to make good on an unconditional money-back guarantee of quality. It is Mr. Hunter's idea that the League should not spend money to advertise a product nationally when it can not control a large volume of America's first-quality honey and control the packing of it.

From the standpoint of the national organization we believe Mr. Hunter to be absolutely right. We believe the the same principle holds good for state associations, but only with respect to advertising campaigns. We believe in the use of uniform labels and uniform containers for state associations, but such labels must bear the name of the man who packs the honey, and such honey must be of standard quality or better. But this is another story—it is stated to make our own position clear.

In closing, Mr. Hunter says there is no slight-of-hand connected with successful merchandising. It is merely the result of following sound business principles. "I realize," he says, "that the advertising committee would enjoy recommending a plan of advertising that would prove successful, but I am unable to see how this can be done at the present time."

What League Advertising Committee Can Do

All of which brings the big question before the membership—how shall the advertising committee function? What must be its field of labor. What program can it adopt and carry out?

If we may judge, the time is not ripe for the commercialization of the League. Beekeepers must first know good honey, understand grading, be able and willing to follow standard methods, and know something of the psychology of advertising and salesmanship. They should apply this knowledge to the building of a 100 per cent local market. Unless the beekeepers get this view-point and act upon it there can be no great advance in the industry. Teaching these things to the beekeepers should be the job of the advertising committee.

We believe, and we are sure that Mr. Hunter believes, that National Honey Week is a League undertaking. It can exert a synchronizing influence among producers all over the country in an effort to create and stimulate local sales; but it is up to the beekeepers themselves to hold the markets which they build. This is possible only when they know what to pack and how to pack. The League has been actively engaged in working up enthusiasm among its membership for this year's Honey Week, November 15 to 21. It is hoped that every producer has co-operated.

It is not meant that this should be the ultimate end for which the League should strive. It is possible that it may some day become a heavily financed corporation, controlling the packing and distribution of the product of its members. When it does, beekeeping will be on top of the world. In the meantime every League member should use his influence to strengthen the organization by canvassing apiarists in his territory and thus swell its ranks. Beekeeping needs organized assistance from within the industry or it will continue to be pretty badly knocked about by the promotion of almost every other food product.

It is believed the idea advocated by Gleanings in Bee Culture of encouraging producer creation of local markets has been a big step ahead, and it seems this should be the logical present policy for the League to follow.

Columbus, Ohio.

SERVICE FOR OTHERS

By R. H. McDonald

How Even the Humblest Beekeeper Can Glorify His Occupation and Enrich His Own Life

The author of "The Americanization of Edward Bok" reviews towards the end of his autobiography the three periods of a useful, constructive life as he sees it.

These periods he considers to be: (1) Education, (2) achievement, (3) service for others.

In one particular, whilst reviewing his life, he does himself injustice in that the period of "service for others" is still placed ahead. To one humble reader, at least, engrossed in the wonderful life of the man and consciously helped and encouraged in life's battle by the nobility of character and sterling example portrayed, has come the irresistible conclusion that the life of Edward Bok has already been filled full with "service for others." Yet, in his own mind still lies the thought, what can I do to help my fellow man? He says:

> A man's "play" can take many forms. If his life has been barren of books or travel, let him read or see the world. But he reaches his estate by either of these roads only when he reads or travels to enrich himself in order to give out what he gets to enrich the lives of others. He owes it to himself to get his own refreshment, his own pleasure, but he need not make that pure self-indulgence.
>
> Other men more active in body and mind feel drawn to the modern arena of the great questions that puzzle.
>
> It matters not in what direction a man goes in these matters any more than the length of the step matters so much as does the direction in which the step is taken. He should seek those questions which engross his deepest interest, whether literary, musical, artistic, civic, economic, or what not.
>
> Our cities, towns, communities of all sizes and kinds, urban and rural, cry out for men to solve their problems. There is room and to spare for the man of any bent. The old Romans looked forward, on coming to the age of retirement, which was definitely fixed by rule, to a rural life, when they hied themselves to a little home in the country and "kept bees." While beekeeping is unquestionably interesting, there are today other and more vital occupations awaiting the retired American.

Herein lies the ideal: the final life of work for others, for the betterment of the lives and interests of the fellowman. What could be nobler or more self-sacrificing.

Those Who Have "Kept Bees."

Who am I, to write one word other than in laudation of so high a conception? I do not dare nor wish to do so. And yet, it is as an apiarist that I feel constrained to take up my pen, not for myself, but rather in defence of those who have "kept bees." May they not be included amongst those contributing to the great ideal of service for others? Has anything been contributed by those who have gone before, and is anything being added by the legion of beekeepers of the present day to the common good, to enrich the lives of others?

I feel impelled to urge the necessity of demanding that the cult of the bee be included amongst the "engrossing questions of deepest interest" and be not relegated to the field of the merely "unquestionably interesting," but not one of the more vital occupations.

Money Returns Not Only Motive in Beekeeping

To many of us, engaged as we may be in keeping hearth and home together by the intelligent management of bees, has come the realization that there is more behind it all than the producing of mere wax and honey and the gleaming of the dollar. The great uplifting influence of the study of the marvelous industry and unselfish devotion of the inmates of the hive, the welding-together in fraternal and happy union of the bee enthusiasts of all nations, in themselves lift apiculture far above the level of the picture drawn for us—pretty as it may be, but entirely missing the true message of the bee—of the retired Roman with his few miserably managed colonies, yet extolled by Virgil in inspired verse.

Shall I omit the army of patient watchers of the present day in the many experiment stations of this and other countries, striving for years on end to give to the world of eager and expectant bee-men the hard-sought atom of new discovery in the life, the habits, the constructive guiding for the use of mankind, of this most wonderful of insects?

The effort to place in the hands of the world the purest of nature's sweets, acknowledged by all to be of the utmost benefit to health from childhood's days until the final call to the land that flows with milk and honey, is of itself commendable in the extreme. And yet it is not of these things that I wish to write. It is in defence of those who have gone before.

Value of Pioneer Work of the Old Masters

Thoughts come too fast for pen to catch. Before me floats the vision of Francois Huber, of Switzerland, the blind scientist, groping painfully his way by means of knotted cords set through his villa grounds, toiling bravely ahead through the long, long years of utter darkness in search of the light of further

knowledge, still held back from man, seeking the full benefit and treasure of God's great handiwork, the bee. I see Francois Huber, throughout the years patiently sifting each particle of evidence, testing again and yet again his own and others' theories, plying question after question to his devoted and loving wife and his other helper, until finally came to the world the news of his many discoveries. The doubting smiles of the scientific world at the work of this blind man, aided by a peasant, were not for him to see, and 'ere he was called away he knew the world was listening. The results he had achieved make him beloved today by thousands of his grateful fellowmen, and it is on his findings that were laid the foundation of present-day investigations. At the age of 82 he died—one whole life devoted to the bee.

Has Francois Huber done nothing to enrich the lives of his fellowmen? I leave it to my reader to reply—to feel, as I feel, the desire to laud the effort to the very skies, so that all may hear of the man who "kept bees," and know what it means to so many of us today.

Is there necessity to go further and speak of others—of Dzierzon and Langstroth, of Quinby and Dadant? Shall I come near and tell of Dr. Miller and many another? Is it fitting that I remind of the passing a few years ago of yet one more who had devoted a life full of patient work and uplifting influence to the cause—our beloved A. I. Root?

Such men have taken as their life's work "one of the questions that puzzle" and have given to the ever-increasing commonwealth of beekeepers, from the largest honey-producer of America to the humblest one-skep cottager of England, the enriching findings of painstaking lives, which spur us on in these present days to add something, if yet we may, to the task so far accomplished, with still so much to do.

Detroit, Michigan.

BEEKEEPERS LIVE BY FAITH

By J. E. Crane

Greatest Reward Comes to Those Who Faithfully Care for Their Colonies Even When Conditions Are Discouraging

The Good Book says, "The just shall live by faith," and that is true. They must live in just that way. Good and evil appear badly mixed in this world.

"Truth forever on the scaffold, Wrong forever on the throne—"

and it looks as though the Ruler of the universe had gone away and left the world to run itself.

It is so with ourselves. We long to live the perfect life, but when the evening shadows fall and we review the day that has passed and note the mistakes we have made we realize that our ideals are still as far in advance of us as the pot of gold at the end of the rainbow, which as children we longed to capture. And still we believe that somehow or in some way we shall attain if we struggle on. To turn back is to lose all. Yes, "the just shall live by faith."

It is the same with the beekeeper. He, too, must live by faith. He believes "seed time and harvest * * * * summer and winter * * * * shall not cease," nor nectar-cups dry up, however discouraging the present may be.

Beekeeper Must Look Far Ahead for His Reward

The working man or the man on a salary draws his check on Saturday and buys at once all he needs, together with a new sled for his small boy or a dainty pair of pink shoes for the baby. That is easy. But the keeper of bees must look far away for the reward of his labor. He must begin in August to toil for the crop he does not expect to harvest until next July; and even then he may have to wait another twelve months before he gets his reward.

Discouraging Conditions in Fall and Winter

Let me illustrate from our own experience. The season of 1924 did not favor the flow of nectar and a small crop was the result. Never mind. Next year will be better. Have faith. A beekeeper must have faith to succeed. But the bees were light in stores and had to be fed heavily if they were to live through the winter. Next year may be a good one and we want the bees. And so we fed freely. A beekeeper must trust the future. But the winter was cold and bees did not winter as well as usual. Never mind. A keeper of bees must not give up.

No Nectar from Spring Flowers

The spring, too, was cold. We said the colonies would build up on dandelions, but the nights were cold and the days were cold also—quite too cold for the bees to get much honey. To give up now would be to lose all. Again the bees must be fed if they were to be ready for the harvest. Sacks of sugar vanished

like dew before the morning sun, while a great pile of food-chambers were divided up to give where most needed. June came without a single clover head to be seen. Should we have to feed all summer? It looked like it. A beekeeper must live by faith.

With June came a wave of tropical heat, and in a few days the clover began to appear. By the 18th we could see that the bees were really getting honey faster than they consumed it. Hurrah! The harvest was at hand.

Continuous Rains Stop Work on Clover

Then it began to rain—at first about every third day, then every other day, and finally every day. Would it ever hold up?

The bees got feed enough to spread their brood, and then swarming began. They forgot the rules laid down in the books. They forgot all the good advice given in the bee journals as to how to prevent swarming. They swarmed with old queens and with young ones. They swarmed with queen-cells and without them. It was "a swarming year." It was discouraging.

Well might we ponder on the words of the old prophet: "For though the fig tree shall not flourish, neither shall fruit be in the vines; the labor of the olive shall fail, and the fields shall yield no food; the flock shall be cut off from the fold, and there shall be no herd in the stalls, yet will I rejoice in Jehovah, I will joy in the God of my salvation."

That is a faith that is good for something. That is a faith that keeps the corners of the mouth from turning down. That is the stuff that good beekeepers are made of. "Never give up," is their motto.

Heavy Honey Flow at Last

The rains that were so plentiful were good for vegetation and soon the pastures were white with clover and the meadows blushing with alsike. It mattered not whether the wind was north or south, east or west, whether we had thunderstorms or not; the nectar-cups seemed always full, and we piled on the supers of sections and supers for extracting, one above another, until some were in danger of falling over.

And then came the joy of the harvest. In spite of all our discouragements we had a good crop of honey—tens of thousands of well-filled sections and tons of supers ready for the extractor. Our faith was changed to fruition and the joy of the harvest.

Some Were Not Prepared for the Harvest

But there were some that were slothful and lacked faith. The bees had given them little honey in 1924. They had become interested in other things. Another year seemed a long way off. It was a great bother to look the bees over when they had given so little surplus. If they had given no surplus, some thought, surely their hives must be well supplied for winter. But the winter was long and cold—the winters in the North are always long—and many colonies starved before spring. Others did not have honey enough to build up in the spring and were of little value.

J. E. Crane and his granddaughter. From a recent photograph showing Mr. Crane as he appears today at the age of 85.

I honestly believe it is a sin to let bees starve. It certainly is very poor stewardship. Bees have moral qualities. They will give their lives for the good of others. Their industry is proverbial. If it pays to keep bees at all it will pay to look after them in a poor year as well as in a good year, when everything seems hopeless as well as when the season is full of promise. Yes, a beekeper must have faith in his calling if he would succeed.

Middlebury, Vt.

[The letting-down of effort after a poor season is one of the greatest sources of loss in beekeeping. After nearly 60 years of experience in honey production this veteran writer is certainly qualified to advise on this important subject.—Ed.]

FROM THE FIELD OF EXPERIENCE

A LANGSTROTH MEMORIAL

One that Should Endure and Expand as Long as Civilization Itself Exists

Practically every industry and every department of learning may be traced to some original investigator, some pioneer whose efforts paved the way for the progress of the generations that followed him. Such an investigator, such a pioneer, was Rev. L. L. Langstroth, "Father of American Beekeeping." Practically every intelligent beekeeper in this country today is using a Langstroth hive, and this is true all over the world where modern methods of beekeeping are to be found. But great as is the debt that modern apiculture owes to Langstroth for the invention of this hive, it owes him equally as much for the first scientific and popular book on beekeeping in the United States, which made his hive and its manipulation known to beekeepers.

These facts are known to all beekeepers. Perhaps not so much is known of Langstroth, the man; of his rare education and scholarly ability; of the remarkable powers of his mind; of the great heart overflowing with kindness and love for all about him; of his dignified yet ever kindly presence; of his hopefulness and courage, that were ever a source of strength. It may well be said of him,

"He was a man, take him for all in all,
We shall not look upon his like again."

It was not only in recognition of his great service to beekeeping and to humanity, but because he believed so thoroughly in libraries and in the value of research work in beekeeping, that Ohio beekeepers took action at the annual summer meeting of the State Association to establish a Langstroth Memorial in the Cornell Library of Beekeeping. As stated in the October issue of Gleanings, a collection was taken amounting to $62.50. For each $50.00 unit contributed to the permanent endowment fund, one book will be purchased each year from the interest on this amount, each book to be marked with the name of the donor and with the name of the man in whose memory the endowment unit is given.

We wish to increase the amount from Ohio beekeepers to at least $100. The secretary of one state association has since written us that his association will follow the example of Ohio and will take the subject up at their winter meeting. This leads us to believe that beekeepers throughout the whole country will wish to thus honor the memory of the greatest man in the history of American beekeeping, and we most cordially invite the beekeepers of every state to join us in establishing this Langstroth Memorial, by contributing at least one such unit to the Cornell Library. All beekeepers who are interested should take the subject up with the secretary of their state association.

Florence Naile.

Columbus, Ohio.

SOME PRINCIPLES OF RETAILING

Lessons in Selling Honey From Experience of Sellers of Other Food Products

There are several hundred thousand retail stores in the United States. Of individuals who, either for themselves or as agents, retail from house to house, constantly or spasmodically, there are perhaps half as many. Retailing is not a new business; it has a history of thousands of years. Out of the aggregate experience of retailers of all kinds, various principles and methods have become established.

When, accordingly, a honey-producer becomes interested in retail outlets for his production, he has the voluminous and exhaustive experience of others to guide him in his enterprise, if he is in a position to observe well and to investigate.

Let us take, first, the producer who would like to build up for himself a sufficient number of dealer-customers to take his whole production, or perhaps a volume requiring that he become, in a measure, a packer of honey produced by others.

Manufacturers and packers of many food products have faced the general problem the honey man now does. From many different sources, the retailers in the home town and adjacent towns are offered honey. They have connections with jobbers from whom they buy coffee, tea, sugar, spices, and scores of other things. They buy of those most convenient when their credit is established. "Not interested," is instantly on the grocer's lips.

But manufacturers of food products have had this problem for years. They have used a formula for it over and over again. This formula is to use consumer advertising in the dealer's own papers, to make the product known to the public, so that the latter asks for it, or takes it readily when proffered; to help the

dealer with display material; to trim his window, etc. When this has been effectively done, the advertiser breaks open the market. After all, the grocer is only interested in profit. Show him profit, and he is sold readily. The advertising must be kept up each year so that the brand will become established with the public.

This does not mean that all a honey-producer has to do is to select a territory, such as his own town and several other towns; block out an advertising campaign in the home papers, for an amount in reasonable ratio to his expected distribution of honey, and take proofs of "ads" and show them to dealers as he goes the round of them in selling. These are the general lines, but close business calculation is necessary all the way through. The plan, economically, is absolutely sound. In a small territory (the temptation to spread out too thin will have to be fought) there is no reason why a local producer and packer can not very shortly establish his honey as the honey known better than any other, and at an expense he can afford.

One plan used in breaking open a market is to agree to take back any goods the dealer doesn't sell. Many national advertisers make their appropriations flexible, so that, if they find dealers in a certain section are loaded up, they release advertising there. Various clever plans are used to boost sales. Coffee firms sometimes mail out to big lists of consumers in a town postcard coupons good for 10 cents on a pound can. Great numbers of the cards are redeemed at stores. A honey advertiser could likewise speed up sales with a coupon postcard, the cards being redeemable at the dealer's.

Only with exceptional good fortune can the honey-producer, starting out to develop extensive distribution through dealers, expect to take profits from the start. Few advertisers ever do. The initial few months of new methods are unprofitable.

A much greater number of honey-producers are interested in the subject of direct sales to consumers. They would like these sales to walk in through the gate. Only a portion will do so: they must go after them. It is worth noting at this point that house-to-house selling has been elevated to high caste in the past four or five years. There are great, powerful concerns which now use house-to-house selling in preference to selling through retail stores. Their salesmen make good money, and the house attains enormous volume.

Take note, though, of certain principles which are universally respected. If a single article is sold, it is of considerable value. Instead of a single article at a small price, the house-to-house man offers a line. If he doesn't sell one thing, he sells another. Though he sells articles of small individual cost, he builds his average sale through selling more than one to the average customer.

Let the honey-producer study the underlying principles respected by the wagon seller of extracts, drugs, etc., and the house-to-house salesman of brushes. It would be economically impossible for a wagon seller of vanilla extract alone to make a profit, or for a house-to-house worker selling only a 25-cent kitchen brush. Each salesman, instead, has a line. The consequence is that he sells at the largest possible number of houses. If one thing he offers isn't needed or wanted, something else he has may be. Further, at places where he makes any sale he can, in a large percentage of cases, sell more than one article. He makes his average sale of such a size that there is a possibility of profit.

Because they have determined correct underlying principles, the big house-to-house concerns can do business on a scale which enables them to use the most costly national magazines for advertising.

Selling honey direct to consumers has real possibilities if it is undertaken with an understanding of the principles just mentioned, but house-to-house work in behalf of a 50-cent sale will not pay unless there are unusual favoring circumstances.

At certain times in certain sections the practical solution is to go after the big sale—say 60 pounds instead of one or two pounds. When the canvasser starts talking a can, he still has opportunity to sell a smaller quantity if the household can not handle the larger lot. Farmers are the people to talk can sales to. In the city such sales to housewives are entirely impractical. There are still left, though, the boarding-house keepers, restaurants, and bakeries.

The second line of procedure, still following the lessons of other house-to-house retailers, is a line of products. A great many producers of honey produce other things, or, if they don't, their neighbors do. A feasible line which would include honey would take in such things as butter, eggs, vegetables, dressed poultry, and farm sausage. In practice, as such a line is handled, honey sales do not lead, because average family consumption of honey is much less than of other things.

There are hosts of marginal opportunities to sell at retail with success, which do not use either the principle of the large sale or the principle of the line,

such as to one's neighbors, friends and acquaintances, relatives, autoists who pass the gate, or through the son in the factory, who takes the orders of his friends. There are many opportunities, too, to locate dealer outlets readily, some of them without any advertising effort such as was outlined. However, most of such outlets quickly demonstrate the law of diminishing returns if extensive effort is applied to them. Their possibilities are limited.

With the two principles of retailing just mentioned, large sale and the line of goods, possibilities are not limited if ability is applied. The plan for developing retail-store outlets first explained, which has been used by many hundreds of food-product houses, with right management, provides for constant growth in outlets, with the producer enlarging and becoming a buyer and packer of honey. It is also adapted to the retail distribution system of the country.

John T. Barlett.

Boulder, Colo

DOCTOR ENOCH ZANDER

A Leader Among German-Speaking Beekeepers Who has Devoted his Life to Research in Beekeeping

Professor Dr. Enoch Zander is, without doubt, the most prominent apicultural investigator of the present day. He is a descendant of an old Scotch family. His remote relatives were obliged to flee from Scotland when they adopted Protestant principles. They settled in the Netherlands in 1543; but there they had no permanent dwelling, as they were compelled to move again on account of their religious tenets. The beginning of the year 1567 found the family in Mecklenburg, North Germany. This proved to be a permanent home. Many of Dr. Zander's forefathers were prominent members of society, among whom his great-uncle, Heinrich Friedrich Zander, who, although originally devoted to theology, became a student of ornithology, and gained in it so high a reputation that the University of Rostock conferred upon him the title of Ehrendoktor (honorary teacher).

Professor Zander was born June 19, 1873, a son of highly respected parents. He showed, even in his earliest years, a great liking for the study of the works of nature. As a student in the middle school he had a large collection of plants and insects formed. On leaving school he delivered the valedictory address. His subject was the discovery of America, which took place just 400 years before his address was delivered. Dr. Zander then devoted himself to the study of the natural sciences, particularly zoology and botany, in the University of Erlangen. He then transferred his studies to Kiel, and ended at the University of Rostock. There he received a call as assistant to Professor Dr. Fleischmann, in Erlangen, where he held also the degree of doctor. In this place he had the further opportunity of studying at the Zoological Station in Naples. Then Mr. Zander assumed the role of assistant at the Institute for International Marine Research in Kiel; but a marine life exerted a malign influence on Dr. Zander, and as a consequence he was compelled to abandon it. He then again repaired to Erlangen, where he served as a private instructor in zoology; and in the year 1910 he became professor in that university. When Bavaria, in 1907, instituted a department of apiculture Dr. Zander was entrusted with its management. His works and researches are numerous in reference to the anatomy of the bee and its diseases.

Doctor Enoch Zander.

We have to thank Professor Zander for discovering the disease known as *Nosema apis* and for further discoveries and observations on the development of the bee. The greater part of these appeared in scientific journals.

Worthy of special notice are Professor Zander's works on the digestive organs

of the bee, which brought to an end the Schonfeld theory in regard to the "stomach-mouth." After that came the works, "The Flight of the Bee," "The Embryonic Development of the Various Kinds of Bees," etc. I have for the purpose of assisting myself in my scientific studies, made regular use of Professor Zander's scientific study-courses, and thereby have gained a deep insight into the cognate works.

But not alone as an apicultural investigator, but also as a practical beekeeper, Dr. Zander has carved out a great name. His method of building up colonies of bees resembles our American Langstroth plan in many respects, and has already had a wide adoption.

Professor Zander has also made a fine contribution to apiculture in his handbook entitled "Apiculture Exhibited in Its Independent Parts." This work appears in five divisions, as follows: (1) Diseases of the Brood, (2) Diseases of and Injury to Adult Bees, (3) The Structure of the Bee, (4) The Life of the Bee, (5) The Culture of the Bee.

The splendid books, "The Culture of the Bee" and "The Structure of the Bee," should be translated into English.

Professor Zander, the modest teacher of nature's ways in the study of apiculture, has done so much in that line of work that it is no more than right that we review his acts and show our appreciation of their value. I have, during the last decade, had an opportunity to follow him, and that is why I deem it proper to show my appreciation of him by expressing my feelings in an American bee journal.

What has for years appeared in the Yearbook of the Institute of Erlangen, formerly as a supplement to the Bavarian Yearbook, is now a separate and independent work. It is an eloquent witness to the ability of a man who has devoted his life to the study of the bee.

Milwaukee, Wis. Louis Alfonsus.

BEEKEEPING IN JAMAICA

Some Advantages and Disadvantages of Beekeeping in the Tropics

From about Dec. 15 to Jan. 21 we get our first regular honey flow, which is from logwood, and lasts only 10 to 15 days. The heart of this tree is a valuable dye, and its nectar makes the clearest and most delicious honey in Jamaica. Sometimes we get an after-flow from the same plant in February, but not every year. We have another honey flow in January and February from the cotton tree, a big soft tree used only in making canoes. It gives a clear, delicious honey, but not so thick and heavy as that from logwood. From these plants we get our best and most honey.

In February and March we do our first extracting. In April, May, and June we do our requeening, increasing by division and swarming, and make our general improvements. During these same months we get an after-flow of dark honey from hundreds of sundry plants, chiefly fruit blossoms. This crop is generally one-half the amount of honey we get from the first honey flow.

In July and August we have to build up our weak colonies to good strength to meet our rainy season from September to November, during which time our bees may die from starvation, not from want of nectar or pollen, but on account of the excesive rain in the West Indies, which washes out the nectar from the flowers. We do our feedings with honey and raw sugar, and pay great attention to our covers to make them water-proof to keep out the rain, which spoils the combs and kills the bees. We feed raw sugar in bamboo joints and honey in frames.

In November and December we have to pay great attention to keeping moths from super combs, because at this time the bees are chiefly confined to the brood-chambers. During this time the bees do plenty of absconding. This is chiefly in weak colonies and in colonies that are superseding the old queens. During these months we get a light honey flow from a running vine with white blossoms which furnish the bees with nectar to build up to meet the regular honey flow from logwood in December and January.

Beekeeping could be made to pay in Jamaica better than in the United States, but it pays Jamaicans far less than the Americans. Jamaicans have less expense, but they lack in the art of beekeeping. They keep bees on too small a scale and they keep too many colonies in some localities, while other localities have few or no bees. When the price of honey goes up everybody wants bees, and when the price drops the bees are neglected. But few study the modern methods of beekeeping and few know beekeeping properly. A few are successful because they pay proper attention to their bees or apiaries. In marketing their product most Jamaican beekeepers sell to the middleman, who pays little or nothing for it. All the honey produced in Jamaica is extracted, and is sold chiefly in England. If beekeepers would go together and ship their honey direct they would get better prices, but they simply sell their honey to the produce-dealer.

Hegril, Jamaica. F. Tonzalin.

BEEKEEPING IN SCOTLAND

Differences Between Black Bees of Scotland and Those of America

It is questionable if as much honey is being produced today in Scotland, with all our modern advantages, as in the days of the skep or the Stewarton hive. We are still suffering from the depression caused by Acarine disease, and, though we now believe that the cause has been discovered, the remedy up to date involves more care and work than the average beekeeper is prepared to give. And yet this remedy is little more than what is entailed in good and successful beekeeping. The agricultural colleges at Glasgow, Edinburgh, and Aberdeen continue to do their part, with flourishing apiaries, lectures, and demonstrations, while the Scottish Beekeepers' Association has started a bright little paper issued monthly.

In rural districts stocks for the most part consist of the native black or brown bee. Many progressive beekeepers in the college areas have tried out the imported Italian bees and found them wanting. In our cool, uncertain climate, as a worker and honey-gatherer the native bees are easily first. Some years the Italians may do better, and the hybrids even better than the Italians, but on the whole they are inferior to the blacks. Farther south in England the yellow bees do well. The introduction of American Italian queens is going on and the results from these may prove, and to some extent are proving, that better Italian bees can be had from America than from Italy.

Reading statements about the black bees in America, one is led to conclude that there are black bees and black bees. We find them not more irritable than the Italians. We find that they winter better. We find that they do far better on the heather, that their section honey is infinitely superior, and that on the whole they are not so apt to swarm. Perhaps the black bee in Scotland came to us from the land of the Viking where they made mead to drink from the skulls of their foes, while the English black bees, about which so many nasty things are being said nowadays, came into England from the south.

Two things they have against them: they go down more quickly before disease, and this may be only because of the smaller prolificacy of the queen compared with the Italians, and they do not fight brood troubles like the Italians.

As yet we have no legislation, though we hope for it. The various associations endeavor to supply education, particularly a branch in the northeast of Scotland with a membership of nearly 3000 sends experts to visit all its members each year. The Scottish Association has under review a scheme of this kind.

Although for the past three years the outlook has been gloomy, we feel that better days are in store. For one thing, Acarine disease has shot its bolt now and the beekeeper who wishes to keep his bees can do so. There has been an elimination of the unfit, both bees and beekeepers; and though beekeeping can never be much more than a side-line, due to the vagaries of our climate, yet it could be made a very considerable source of income and would return a good interest for the capital invested.

Rev. William Murdock.

Aberdeenshire, Scotland.

PRONUNCIATION OF PROPOLIS

Dictionary-Makers are Apparently Confused as to This Word

I have always been interested in the derivation, meaning, spelling, and pronunciation of words. So it happened that the first article I really read in the October Gleanings, after leafing over its pages, was the one by R. B. Willson, entitled, "A Lesson in Pronunciation."

I must say I was somewhat surprised. So the proper pronunciation of the name of that pestiferous nuisance to the beekeeper, bee glue, is prop'-o-lis, instead of pro'-po-lis, as I had always pronounced it and almost invariably heard it pronounced. That sent me on a hunt to the dictionaries. The Standard gives both pronunciations, with pro'-po-lis preferred. So do the earlier editions of Webster. But the latest edition of Webster reverses this, giving only prop'-o-lis. Here, doubtless, is where Mr. Willson got his authority.

But why should Webster right-about-face on the pronunciation of a word? Sometimes the authorities on language are forced to do this by the pressure of universal custom, but I can hardly believe that that has been the case with this word. I have been a beekeeper for forty-nine years in Illinois and Colorado, and during that time I have met and talked with many of the most prominent beekeepers of America, from L. L. Langstroth, the grand old father of modern beekeeping, down to those of recent times, and I have seldom heard the pronunciation prop'-o-lis. Especially among the better educated, it has almost invariably been pro'-o-polis.

Then the word is an uncommon one. Familiar as it is to beekeepers, I doubt if much over one per cent of the people

at large would be able to define it or would have any definite idea as to its pronunciation. Whence would come the lexicographer's knowledge of any overwhelming demand for a change in pronunciation?

When authorities differ we must sometimes make our own decisions, and inquire which side of an argument has the more reason behind it. All authorities agree that the word is derived from two Greek words, *pro*, before, and *polis*, city, meaning a protection or defense to the city. Anyone who has ever observed how the bees close up every crevice with it, and even often reduce a too large entrance to the citadel of their hive, will recognize that there is some appositeness to this derivation. Now, this being the case, why should the first letter of the second part of the word be tacked to the last letter of the first part? Pro'-po-lis agrees with the derivation of the word, while prop'-o-lis conceals it. Decidedly, I think pro'-po-lis is the more reasonable pronunciation, and until I see more reason for changing than I do now, I shall continue to use it. J. A. Green.

Grand Junction, Colo.

HONEY FOR THE HOLIDAYS

How It Can be Used for Christmas Dainties Instead of so Much Refined Sugar

Honey is the ideal sweet for Christmas, since over-indulgence does not bring the penalties of cane sugar. Being an invert sugar, it does not cause fermentation. In sugar cookery it takes the place of corn syrup or molasses. Taffy may be made of equal parts cane sugar and honey, or molasses and honey.

Fudge

Use one level tablespoonful to each half-pint of sugar, cooking to the soft-ball stage, 238° Fahrenheit, with one-third cupful milk, stirring frequently. When you can barely pick up a ball of it out of cold water, remove from fire, set in pan of cold water, and, when lukewarm, beat hard until it loses its gloss, then pour into buttered tin. Honey fudge requires longer beating, but it keeps fresh longer. It needs no flavoring, as it contains a delicate aroma. However, I add a holiday touch, by stirring in one-fourth cupful chopped red and green maraschino cherries, drained from their juice, before pouring. Or after it is marked into squares, half a cherry may be placed upon each piece.

Honey Caramels

These are not hard to make, using a thermometer to cook to exactly 244° Fahrenheit. Testing in cold water, you should have a quite firm soft ball, not yet a hard ball. Measure one cupful each of honey, sugar, and corn syrup and cream. Stir as it cooks, and when just right, pour half an inch thick into buttered tin. When quite cold, cut with a sharp steak knife into cubes. If this is too soft, you know it has not been cooked long enough.

Cranberry Preserves

Prick skins of cranberries, and add equal parts honey and water, or half as much water if you watch that it does not stick to the pan. Boil slowly in new porcelain pan or aluminum until the berries are tender, yet keep their shape, and the syrup is thick. Then pour into sterile jelly glasses and seal. This will keep a long time without sealing. If honey is expensive, and easy to sell, use half granulated sugar, which is cheaper. Decorate with strips of green angelica.

Baked Apples

are stuffed with chopped celery, raisins, and nuts, with honey poured over the top, and a sprinkling of cinnamon before baking in a slow oven. To make the skins tender, cover for fifteen minutes, then uncover to finish baking. Pears may be baked in honey likewise.

Cinnamon Toast

Christmas breakfast is made different by serving cinnamon toast. Mix warm honey with creamed butter and a little cinnamon, spread thinly on sliced bread, putting two slices together and toasting quickly at 450°, a hot oven. Use one-half cup honey, one-fourth cup butter, and ½ teaspoon cinnamon.

Popcorn Balls

When these are made with honey they must be served at once, lest they become moist and sticky, or else they can be reheated. Warm the honey to 245°, to drive off the water. The balls are shaped with hot honey, which becomes hard on cooling.

Honey Squares

These keep a long time in a tin box which is hid. Mix one cupful liquid honey with ½ cupful sugar, adding two cupfuls bread flour which has been sifted with two teaspoons baking powder and ¼ teaspoon soda, and spicing as desired. If the honey flavor is liked, add just a speck of cinnamon; but you may spice with one teaspoon each of cinnamon, ginger, and cloves to relieve the cloying sweetness of the honey. Let the sugar stand long enough to dissolve and stir, then add dry ingredients, and enough rich cream to make batter right for cake baked in dripping pan or muffin tins. The batter should start to flow from the spoon, then break before it reaches the pan. Cream is omitted if these are to be kept several months. Spread with chocolate powdered-sugar icing.

Cedar Rapids, Ia. Doris W. McCray.

GRADING YOUR OWN HONEY

Beekeepers' Ideas of Various Grades Modified When Crop is Poor

A Vermont beekeeper said to me not long ago: "I never grade my own honey, because when it comes to a matter of dollars and cents, I am apt to be selfish, like most other people. I turn the grading over to one of the hired men, and say: 'Here are the rules for grading, and I want you to grade this honey just as it should be done.' There is no temptation for him to slip a comb of one grade into the next higher on account of a cent a box, or so."

When there comes a short year, it is natural for a producer whether he has honey, grapes, or apples, to err in his own favor if a product is close to the dividing line.

Commenting further on this matter of grading honey, my Vermont friend Crane says:

"Our law says that the net weight must be stamped on the section or container. Our beekeepers violate the law when they mark all sections, light and heavy, 'Minimum weight 11 ounces,' and they also hurt themselves. For, when you go into a store to buy a section of honey, and all the sections are marked 'Minimum weight 11 ounces,' you are going to take the heaviest one, and the fellow that gets the lighter one is going to suffer. If your honey weighs more than 11 ounces, and you stamp it 'Minimum weight 11 ounces,' you will get an 11-ounce price for it, no matter what it weighs."

The first thing Mr. Crane does (or his hired man, rather) after the honey is gathered and taken to the shop, is to stack the honey away until he finds time to clean it. Later each section is taken out of the super and scraped. When the honey is being cleaned, it is graded for color—color of honey as well as color of cappings. Dark honey goes into one pile, light in another, lighter still in another, and so on. All stained combs are taken out by themselves and put into a room with glass sides. If the stains are travel stains, they bleach out in the sunlight."

A great many beekeepers believe that there is good business ahead for producers of comb honey, and the man who will grade closely should profit by Crane's suggestions. E. A. Kirkpatrick.

Collingswood, N. J.

[The hired man will also unconsciously modify his grading to some extent from season to season even with the grading rules before him. During a poor season, the tendency is to let down slightly on all grades, especially as to color of cappings. Color cards would help in this.—Editor.]

DERIVATION OF WORD PROPOLIS

Bees Sometimes Build Wall of this Material at Entrance for Defense

I was interested in Mr. R. B. Willson's article, "A Lesson in Pronunciation," in the October number of Gleanings, and think he was quite justified in writing, and you in printing, such an article. Though probably most of us have dictionaries on our shelves, it is surprising how little some of us use them.

I must admit myself to have been in the habit of putting the accent on the first syllable in the word propolis. I was led into this error because I know that the word was derived from two Greek words, *pro*, before, and *polis*, a city. The word originated from the fact that ancient beekeepers had noticed that bees would frequently build a rampart for purposes of defense at the entrance to their hives. They, therefore, called the material used propolis—before the city.

In my own apiary I came across some excellent examples of propolis used in this way when doing some spring cleaning. Last summer I used the deep ⅞" side of the bottom-board, and when autumn came, in many cases I neglected to reverse the bottom-board, thinking that possibly the extra air space under the combs might be an advantage. Several of the colonies, however, thought not, and they built solid walls of propolis from the floor to the combs above, and extending from the hive walls on each side towards the center where an opening of only a few inches was left.

In Australia, some years ago, I came across a nucleus which had been badly troubled by ants. The bees in this case had completely closed the entrance except for two or three small circular holes which exactly fitted a bee's body.

While on this subject I should like to protest against the use of the term 'foundation comb." I have noticed it recently in one or two American journals, and it is very common in Australian journals. Why this putting the cart before the horse? A builder does not talk about a foundation house, then why should a beekeper speak of foundation comb when he means comb foundation?

Canterbury, Eng. B. Blackbourn.

[The Editor once saw a colony of Caucasians, whose hive had been upset and the hive-bodies separated several inches, that had built a wall of propolis connecting the hive-bodies. This wall was about five inches high on one side extending around the cluster and having a few holes just large enough for one bee to pass. With a guard on duty at each hole this was indeed a rampart "before the city."—Editor.]

XUM

SIFTINGS

by J. E. Crane

It is refreshing to read on page 733 that "steadily forward goes the Empire State Honey Marketing Co-operative Association, Inc." This is somewhat different from many such organizations.

* * *

Mr. Pettit's remedy for our lack of a ready market is co-operative marketing. But co-operative marketing is a rather bitter remedy to take for the most of us, and I fear we shall continue to struggle on without it until we are too ill to go farther.

* * *

Where beekeepers are isolated and know but little of each other, co-operation seems some distance away, and I believe the method suggested by the Editor to be preferable. We are buying more or less every year and find it quite an advantage always to have a supply on hand every year, and at all times during the year.

* * *

A. N. Clark's article on "Measuring Food Values," on page 717, is well worth careful reading and study if one has not already given the subject thoughtful consideration. It is undoubtedly true that many persons are starving, although eating freely of carbonaceous foods. It may account for much of the ill health of young people of the present day. Moral: Eat honey instead of refined sugar syrups.

* * *

Commencing on page 704 Morley Pettit makes a very correct diagnosis of our troubles and also suggests a remedy. He says, "The enemies of honey are these: sugar, manufactured syrups, fruit and fruit products such as jams, jellies, marmalade, canned and preserved fruits"; and he might have added candies, including chocolates in endless variety and tempting displays, which are quite likely the worst enemy of all.

* * *

The Editor of Gleanings in Bee Culture says on page 702 that more honey dealers are needed and he is quite right. He goes on to say that "where co-operative marketing of honey is not practical, beekeepers who have some sales ability should buy and sell honey. "Also every dealer in beekeepers' supplies, whether large or small, should deal in honey, buying from beekeepers during seasons when honey is plentiful to ship to a region where honey is scarce, and in poor seasons buying from regions of plenty to supply his beekeeping customers who do not have enough to supply their demand." Good advice, certainly. Perhaps this is the best way in large sections of country where beekeepers are isolated.

* * *

It is a pleasure to read such a candid and sensible article as that by Bruce Lineburg, on page 709, entitled, "Strain of Immune Bees." I believe he is quite right. I have noticed a great difference in different colonies to withstand disease. This is especially noticeable with European foul brood. After discussing the possibility of securing a strain of bees immune to American foul brood, he wisely concludes that for the present the best remedy is "fire, boiling lye, or formalin."

* * *

I like to read what J. L. Byer has to say, for he seems to write without fear or favor of any one. Indeed, he does not try to make his experience harmonize with those of others, but gives his experience for what it is worth. I had supposed that the food-chamber was the last word in producing extracted honey, but Mr. Byer finds them not altogether perfect. Alas! our land is so broad and conditions so different that it pays each beekeeper to think for himself and solve his own problems, after getting what light he can from others.

* * *

Commencing on page 711 Leslie Burr has an article on "Greater Publicity for Honey." When Mr. Burr has anything to say it is well to sit up and take notice. He tells us in an interesting way the advantages of keeping all news about bees and the honey crop prospects before the people. I honestly believe that he is right. I suppose no question is asked more frequently than, "What has the season been?" or "How have the bees wintered?" Mr. Burr draws a very clear line between news and advertising, so that one who writes may do so wisely and well.

* * *

For many years now bee journals, manufacturers and beekeepers have been pushing the production of honey until production and consumption have become unbalanced. Inventions and improved methods have greatly increased our crops of honey. In western Vermont, where many years ago only a few thousand pounds of honey were shipped out in a good season, we now send out several carloads. It is certainly time for beekeepers and bee journals to turn their attention from production to the problem of increasing consumption of honey.

FROM FOREIGN LANDS By W. J. NOLAN

A national beekeepers' meeting was held in Holland on August 28.

The long time required for queens to reach Argentina from either Europe or North America is often mentioned in the Revista de Apicultura. Under such conditions the question of the proper queen-cage candy loses none of its importance. In the same journal we find a prominent American queen-breeder referred to as "he with the beard of bees."

Importations of honey into England for the year ending March 31, 1925, amounted to 918,997 pounds from Canada, 1,186,289 pounds from New Zealand, and 41,871 pounds from Australia. These figures appear in L'Abeille for October, which also gives the importation from Canada in the preceding year as 513,038 pounds, while that from New Zealand was about 200,000 pounds less than in 1925. The foregoing may be compared with statistics issued by our government which show that for the year ending March 31, 1925, the United States exported 2,047,367 pounds of honey to the United Kingdom as against 1,328,355 pounds in the preceding year.

So used are we to wooden hives in this country that the thought that at least some types of such hives may be unsuitable in certain regions of the globe may be new to some beekeepers. Yet in the Bienen-Vater for September, a beekeeper in southwest Africa claims that, owing to humidity and temperature conditions in his locality, wooden hives soon become warped and unfit for use. He plans experimenting with various materials such as banana leaves, reeds, stone, and clay. The native honeybee there is somewhat more yellow than the Italian and the queens are shorter This beekeeper does not commend them either for gentleness or non-swarming propensities.

That a demand for honey once established tends to maintain itself if honey is at all available is illustrated by the statistics of Austria's imports and exports of honey for 1924 published in the September issue of the Bienen-Vater. The imports amounted to 8348 metric quintals (1,836,560 pounds), of which 2982 quintals (656,040 pounds) came from Chile, and 1040 quintals (228,800 pounds) from Italy. The total is more than double that for 1922 ((4084 quintals), and is said to equal the annual importation into the pre-war Austria. The inability of Austrian beekeepers to produce enough honey to meet their country's developed demand is ascribed largely to bad wintering.

An octroi duty on honey entering Paris has just been placed which amounts to 30 francs per 100 kilos (220 pounds). There was formerly a similar tax of 42 francs per 100 kilos on wax, but this has been raised to 80 francs per 100 kilos, according to L'Apiculteur for September. The payment of indirect taxes like the octroi, which is really a duty on foodstuffs entering a city even though they be produced just outside the city's limits, may seem strange to some in a land like ours where most of the taxes are levied directly. The octroi is found in other countries as well as in France, however. Honey in Paris was quoted at 620 to 650 francs per 100 kilos, and wax at 1700 to 1800 francs per 100 kilos. Both quotations were wholesale, and did not include the charges to be met on passing the city's limits.

Fifty years as a beekeeper is a record achieved by several, but to Prof. N. P. Kunnen, of Luxemburg, belongs the distinction of having taught beekeeping for that length of time. His record as a beekeeper extends ten years longer, we are informed by the October issue of the Luxemburgische Bienen-Zeitung. Besides being editor of the journal just mentioned, he is honorary professor of apiculture at Ettelburck, Luxemburg; a vice-president of the International Apicultural Congress; and was recently awarded the title of Chevalier de Mérite Agricole by the French government. Professor Kunnen's name has appeared in the bee journals of America and Europe for years.

That Europe will be swamped with honey from this continent, once the rates of exchange become firmly established again, is the opinion expressed by Mr. Baldensperger in an article in the Bienen-Vater for September dealing with apiculture in Europe and America.

The exportation of honey from New Zealand for this year had amounted to 713 tons up to the middle of August, an increase over 1924 of 226 tons, says a correspondent of the Australasian Beekeeper for September. Hopes are entertained that approximately 1000 tons will be available for export during 1926. The importance of New Zealand as an exporter of honey is seen in the fact that, whereas nearly 500 tons of honey were exported from there in 1924, the total exportation from the United States, 2500 tons, was little more than five times as large, although the ratio between production in the two countries is much greater. We, however, have the advantage of a large population within our

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borders to whom to sell. Consequently while probably only 3 or 4 per cent of our crop is exported, the larger share of New Zealand's crop must be exported if it is to find a market. This condition undoubtedly led to the passage of the Honey Export Control Act of 1924, under which a board of three members was established to supervise exportations of honey. One of these members is appointed by the government, and the other two are elected by the honey-producers. Their control may be limited or absolute, as they see fit. Thus far it has been limited to designating one single firm in England as the one to whom all honey exported to the British Isles or continental Europe must be sent. For some time before the Act of 1924 there was a voluntary honey export control on the part of the producers. The New Zealand Honey Producers' Association, with its requirements as to packing and grading, has been a most potent factor in the past in giving New Zealand honey its good name on the English market.

The honey and wax situation at Liverpool is described in L'Abeillle for October. Foreign honey and wax are received at this port from the United States, Canada, New Zealand, Chile, Cuba, Jamaica and Hawaii. California honey is more popular there than South American or West Indian, but would suffer much competition from Canadian honey if the prices of the latter were on a competitive basis. Attention, however, is called to the fact that New Zealand honey is sold readily even at prices about twice those of California honey. This is ascribed to the publicity given New Zealand honey, as well as the care and attention paid to packing and grading. Much extracted honey is shipped to England in 60-pound tins, and is then put into smaller containers. There is a larger retail demand for one pound and 1½-pound tins than for 5 and 10 pound pails. Nearly all of the New Zealand honey and a large part of the California honey is used at the table. Wax on the Liverpool market comes mostly from West Africa, Bengal, and South America. That from Chile is best but limited in quantity. Wax is imported in cakes of 50 or 100 pounds each, or thereabouts, wrapped in burlap.

The status of apiculture in the region of Spain where the Valencia oranges are produced is interestingly described by Señor Jose Chocomeli in the September issue of La Gazette Apicole. The Province of Valencia alone, with some 20,000 hectares (around 49,500 acres) contains some five million orange trees, but, unfortunately, the orange tree is practically the only source of nectar. Each blossom is said to furnish nectar for about four days, and any one tree for about four weeks, while for a whole orchard the period is a month and a half at least. Señor Chocomeli finds that the greatest secretion of nectar by the orange takes place between 7 and 8 o'clock in the morning, and that the minimum of nectar is found about 3 o'clock in the afternoon. Secretion at night is greater than that by day, but the height of activity on the part of the bees in gathering the nectar comes about noon, reaching its extreme point at 1 o'clock. In the Province of Valencia are some 25,000 hives, many of which are of the non-movable-frame type. It should be noted that within the past few years newer methods and movable-frame hives have been coming into use. American foul brood is at present exacting a heavy toll. Although the use of movable-frame hives is still in its infancy in this and other regions of Spain, government aid is expected to usher in rapidly a new era in beekeeping. The king, Alfonso XIII, is said to take an active interest in apicultural conditions in his country.

The 63d assembly of German-speaking beekeepers was held in Vienna, Austria, in the early part of September. These gatherings date back about three-quarters of a century, and with some exceptions, have been held annually. In the early days they were under the leadership of men like Dzierzon Berlepsch, Leuckart, and others well known. It was at the 14th of these meetings, held in 1865, that von Hruschka inaugurated a new era in beekeeping by making public his invention of the honey-extractor. It is also interesting to note that Gerstacker's valuable paper on the geographical distribution of the honeybee was written as a souvenir for the 11th gathering in 1862, and served as credentials for the delegates. As there were only 524 of the latter, only that number of copies of the paper appeared, and so it was soon almost completely lost excepting a few copies. In connection with this year's assembly an international beekeeping exhibition was held, and one day's program was given over to beekeeping from all countries, disease being the main topic. Doctor Armbruster, of Germany, held the loss from diseases as equal to only about one-seventh that from bad wintering. Among the more prominent people present from other than German-speaking regions were: Doctor Rennie, of Scotland; the following editors of bee journals: Baldensperger, of France; Kitzberger, of Czecho-Slovakia; Lundgren, of Sweden; Popov, of Bulgaria; and, in addition, representatives from Jugo-Slavia, Latvia, Japan, Hungary, Spain, Roumania, and Palestine. The meeting in 1926 is scheduled for Ulm, Germany, and that in 1927 for somewhere in the German-speaking section of Czecho-Slovakia.

FROM NORTH, EAST, WEST AND SOUTH

In Southern California— Southern California has had several showers, in some sections amounting to several inches of rainfall. This is a wonderful start for the honey season of 1926. But it is too early to even venture a guess as to what the season will be.

On a trip since our last letter, which took us through some of southern California and a considerable part of Arizona, the results of early rain were very apparent. Especially was this noticeable through the desert regions of Arizona. Grass and flowers were starting everywhere. Even the cacti were putting out new leaves, and everything looked fresh and lovely. October is a fine month in which to camp through Arizona. The balmy days, cool but not cold nights, and that bracing air that follows the summer heat and precedes the winter cold, fills one with a desire to live next to nature once in a while. With meals cooked over the campfire, a bed on the ground, and the blue sky for a roof, that is the life for a real vacation. The Imperial and Palo Verde valleys of California, and the parts of Arizona visited, produced a fair but not large crop of honey this year.

Honey markets have been very slow, but there has been some inquiry lately, and those few who have any honey on hand feel that the demand is sure to be better later on. Especially is this true of the orange honey, which has been pretty well cleaned up in southern California.

Beekeepers who shipped their colonies to northern points bring back various reports of success. We have heard of no failures, and reports of surplus vary from 40 to 90 pounds per colony. The condition of colonies, weather conditions, honey flow, number of combs and amount of supplies, and the help available all entered more or less into the success of the crop. A number of those who shipped their bees have left their colonies packed in such a way that they can either bring them back to California or leave them up there for next season. They will determine later what to do as the prospects for honey in southern California develop.

The writer served as judge at the Bee and Honey Exhibit of the Orange County Fair held at Santa Ana recently. The exhibit of bees and apiary appliances was good, and the display of honey, especially the orange honey, was exceptionally fine. We also visited the Los Angeles County Fair held at Pomona. Two exhibitors there put in practically all of the honey, but the display would do credit to any show in America. One exhibit alone contained over two tons of honey, which was mostly orange, and of exceptionally fine quality.

The exhibit at the Riverside County Fair also showed the honey to be of a fine grade, even though our honey crop was one of the shortest in years.

Corona, Calif. L. L. Andrews.

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In Northern California— Not for eight years has our Agricultural Experiment Station given us a publication relating to beekeeping. It is with unmitigated pleasure that we announce the arrival of Circular 297, "A Survey of Beekeeping in California," by G. H. Vansell, and "The Honeybee as a Pollinizer," by E. R. DeOng. It aims to help the beginner and the outside beekeeper who intends to practice his pursuit within our boundaries. Mr. Vansell in his portion of the paper states briefly the present status of the industry, what the prospective beekeeper may expect by way of livelihood, and lastly an account of our needs. The author very advisedly points out that California beekeeping and dividends are by no means synonymous, for we have many things to contend with, such as variable seasons and diseases. Furthermore, he tells us that the estimated output of queens is annually over half a million, that a candied-honey market is being rapidly developed, and that if we would give more thought to providing drinking-places for our bees located near orchards it would minimize the possibility of their sipping poisonous spraying materials.

The writer, however, takes exception to some of his statements, notably the following sentence found on page 6: "The German-Italian hybrid is a very good combination, having enough spirit to protect the colony effectively against tramps or marauding skunks, etc." The point at issue is the manner in which the skunk acquires his evening meal. Observations by the writer have shown that the skunk approaches the hive entrance and attracts the bees by scratching and pawing about. Populous colonies appear to be his favorites. The animal's antics soon infuriate the bees and it is not long before the skunk has dozens of little defenders burrowing into his fur. At this stage of the proceedings, the intruder rolls over and over to kill the bees. Next a vigorous shaking dislodges part of the

beekeeper's working force, after which the bees are picked up and eaten. In the quotation above it is stated that the German-Italian hybrid has "enough spirit to protect the colony effectively," but as a matter of fact it is the spirited colony, the populous one with plenty of guards at the door, that offers the biggest sacrifice and the weaker and mild-tempered colonies that the skunk invariably ignores.

The resumption of the short courses this winter is practically assured. It is being planned likewise to hold the convention of the State Association at the same time. One short course will be held at Chico and the other at Santa Ana, and in all probability the association will convene at both places. The tentative Chico dates are January 21-23, and no doubt the Santa Ana dates will be several days later. From our university Messrs. Vansell and DeOng, and from Washington, D. C., at least Mr. James I. Hambleton will participate in the short courses.

The honey market drags. One and two months ago it was quite a bit firmer, but today dealers are buying bottled goods very sparingly. It is expected, however, that during November sales will pick up very appreciably, for it is during this month that wholesalers commence to stock up for the Christmas trade. At present white sage is quoted at 13 to 14 cents, with practically no demand. Wax is strong and in demand at 35 cents.

Monterey, Calif. M. C. Richter.

* * *

In British Columbia—British Columbia's honey crop for 1925 has not come up to the expectations that were expressed in this column at the time of last writing in June, when conditions for a record yield were so promising. The total crop will in all probability be at least twenty per cent less than last year. Returns from beekeepers from the different parts of the province are still coming in, so that a complete estimate is not at present available. The more northerly sections seem to have been more fortunate in securing better yields than many of those farther south.

From one locality on the Canadian National Railway, formerly the Grand Trunk line, the western terminus of which is at Prince Rupert on the seaboard, a report has been received from a beekeeper who lives close to the 53d parallel. He states that he started keeping bees there last spring and is quite a beginner. He purchased six colonies, which increased to fifteen, and his total honey crop amounted to twelve hundred pounds, an average of two hundred pounds per colony, although, as he says, they were badly mismanaged. With good management what might these colonies not have been capable of producing? He does not mention the sources from which the honey was obtained, but most likely fireweed contributed largely. As time goes on, when these northern latitudes become more thickly populated, there seems little doubt that honey production will feature largely in providing a good side-line in enabling the settlers to make a living.

Progress continues to be made in British Columbia in dealing with disease. It is possible now with the equipment in hand, including an up-to-date microscope, to diagnose correctly and quickly any samples of disease, or suspected disease, that are sent to the Department of Agriculture. A microscopic examination can be easily made if a smear is forwarded for examination instead of a piece of comb. The directions for making a smear, as advised by Mr. Kelty of Michigan, are quite simple. A portion of the decayed matter is removed from the cell by means of a sharpened match-end, or a clean toothpick, and transferred to a clean piece of paper in the form of a small circle. A piece of tough paper is best. If smears are taken from more than one hive they can all be placed on one sheet of paper, and a line drawn round each circle, afterwards marking it with the number of the colony from which it was taken. After allowing the smears time to dry the paper can be folded and placed in an envelope and sent through the mail. This plan will usually be found more easy of accomplishment, and more expeditious, than cutting out a piece of comb, and packing it in a suitable box for mailing. The cost is also less and there is less risk of spreading disease in this way.

The annual show of honey, apiary products, and appliances was held as usual at New Westminster in September last. under the management of the British Co lumbia Honey Producers' Association.

Victoria, B. C. W. J. Sheppard.

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In Texas—The weather during the month of October was much better for the growth of honey plants than for the bees. The long drought was broken and more or less general rains have continued throughout the state during October. In the cotton section a fair crop was made despite the ravages of the cotton-leaf worm. Along the Edwards Escarpment, the sumacs, the rock brush, and some of the minor honey plants gave fall honey flows. Many beekeepers in localities where there was no fall honey flow moved to the hills and obtained winter stores, and in some cases

a surplus. In the chaparral country, como, valley sage, rock brush, and a few other bushes are still yielding. Broomweed and "yellow tops" have not as yet made any contribution to the winter stores. These plants, however, seldom yield until the arrival of cold nights. The continued rainfall has made possible a good stand of seedling horsemint and permitted many other honey plants to make the necessary growth to insure blooming next spring.

Reports of beekeepers on the condition of their bees show a great variation. In the same locality, one beekeeper will report starvation and his near neighbor abundant stores. In so far as can be learned, this condition is the result of the very local showers that brought on a local fall blooming of plants.

W. C. Collier, of Tucson, Arizona, who up to four years ago was one of the most prominent beekeepers of Texas, made a visit to his old haunts this month. He likes Arizona and exhibited some beautiful samples of catsclaw and mesquite honey from his yards in that state.

The article by Dr. Bruce Lineburg on a strain of bees immune to American foul brood recalls to the writer very vividly an experience of a similar kind that happened some twelve years ago. Three strong colonies remained as the sole survivors of a foul brood yard. A year's wait showed no disease. Here was what was wanted—colonies immune to American foul brood. That summer the colonies were each given a comb that was full of dead larvae and scales, and they cleaned out the combs. No disease developed. The second year a foul brood comb was again given each colony and again the combs were cleaned up. But the third spring all three colonies developed American foul brood in the spring brood period. There is hope that the immune bee exists, and may some one find it.

San Antonio, Texas. H. B. Parks.

* * *

In Iowa — This October will go down in history as the worst one for bees in the history of the state. The 30th and 31st were the only two days that the sun shone all day, and there was not a single day the bees were out before that, so it is easily understood there could be no feeding done. During the latter part of September I extracted all of the fall crop that I thought might not be well ripened, and filled the 10-lb. pail feeders with it, expecting to put the feeders on in a day or so, but they are still in the honey-house and will remain there until spring. There has not been a single day that the bees would have taken the honey from the feeders. There is only one thing left to do, and that is the first day that the hives can be opened, to remove some of the light combs and replace with combs filled with honey. Fortunately I have enough full-depth hive bodies of honey that I did not extract to tide the colonies through the winter, besides 2000 pounds of fall honey in shallow frames that I could put on; but as I winter in the cellar this will not be the most convenient thing to do. Beekeepers who were obliged to feed their bees are sure up against a hard proposition unless they have plenty of combs of honey. Fortunately for me, I crowded the bees on the fall honey flow all that they would stand as I wanted to crowd all the honey into the brood-chamber that I could, so most of the colonies have plenty to last at least until spring.

We had four inches of snow and it remained for the greater part of a week, the thermometer going down to two degrees below zero, thus giving a touch of real winter. Potatoes were caught not dug and a good many bushels of apples have been frozen on the trees. We had three fine sunshiny days that took the snow away, and the roads were beginning to get in fair condition, but today (Nov. 4) it has rained all day and the roads are just about impassable for autos. It is getting serious for the farmers as there is little corn husked as yet, and the fields are so soft it is going to be hard to pull anything like a load from the fields.

Last month I gave talks on bees and honey (mostly honey) at farm bureau meetings in the near-by townships. The farm bureau has a fashion of exchanging programs in these parts and I was one of the speakers from our township. I do not know how much I accomplished, but I believe this is a good thing, and that beekeepers in general should not let an opportunity pass to give the people a better understanding about honey and correct some of the erroneous ideas in the minds of people, and that are being published from time to time, such as one I just read the other evening.

The writer was telling how shellac is obtained, and wound up by saying that the insect from which shellac is obtained deposits its droppings on the twigs of the tree, which deposit, after drying, becomes shellac, "much in the same way that honey and beeswax are produced." This is some advertisement for honey, I should say. The poor fish may have known something about shellac, but he certainly showed his ignorance when he broke in on honey. The worst of it is, there are many people who know nothing about bees who will believe this statement. W. S. Pangburn.

Center Junction, Ia.

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In Michigan—Late fall feeding and packing were hindered by unfavorable weather conditions. Some parts of the state received ten inches of snow in late October. Colonies that are yet to be placed in the cellar are at a particular disadvantage for lack of protection.

The fifty-seventh annual meeting of the Michigan Beekeepers' Association will be held in the Chamber of Commerce at Lansing, December 10-11. Elaborate preparations are being made for the program, which will be based on discussions of the marketing problems from all angles. Prof. J. T. Horner, economist and authority on marketing, will discuss the basic principles of successful marketing; J. W. Knapp, proprietor of Lansing's leading department store, will discuss general principles of merchandising; Wm. A. Weir, secretary-treasurer of the Ontario Co-operative, will tell of its success; and local beekeepers will describe their methods of selling. Everybody is invited.

Another beekeepers' short course will be given at Michigan State College, February 8 to 19, 1926. The lectures and demonstrations will be presented by members of the college staff, supported by authorities from outside the state. The course is designed to be helpful to both the beginner and the commercial beekeeper. Practically the only expense is for board and room while in attendance.

Cloverland beekeepers, way up in Chippewa County, in the Upper Peninsula, have, on their own initiative, organized what they call the Chippewa County Bee Club, and are co-operatively advertising Chippewa County honey in the Soo papers, three times a week. Their work has encouraged grocers having a stock of their honey to mention Chippewa County honey in grocer advertisements. Although this territory was formerly supplied with honey from Lower Michigan, at reduced prices, grocers are now stocking Cloverland honey—all of which stimulates those commercial beekeepers now operating in "the home of the clovers."

The Director of Apiary Inspection has been busy lining up the program of work for the coming season. In the county work, very satisfactory co-operation is being received from the county supervisors. Already twelve boards have made appropriations averaging nearly $200 for use in eradicating foul brood in those counties, in co-operation with and under the administration of the office of apiary inspection. This additional support from the county boards of supervisors gives added impetus to the area-clean-up work, and gives county beekeepers' associations a reason for existence, since it is through these associations that influence is brought to bear on the supervisors. And in thus obtaining recognition for the needs of beekeepers in those counties, the industry rises just a little in the scale of public opinion.

R. H. Kelty.

East Lansing, Mich.

* * *

In Arkansas—The beekeepers of Arkansas have indeed had a trying time during the year 1925. We were counting upon great things in the way of bees and a big crop of honey, but in each case we were disappointed. One good beekeeper, Mr. Hawkins, who lives in the holly belt of our state, wrote me that this is the first season that he has had what he would call a failure. He had made plans to have a real exhibit of honey at the state fair, but could not for the reason that it takes honey to have a honey exhibit. The drouth hurt all of us this season, and 1924 was not a great year with us. Probably if we will tighten up our belts and be prepared for it, we may get a bumper crop during 1926. Let us hope so at least and build to that end.

In my opinion the beekeepers of Arkansas should watch their step or they will have a heavy loss of bees from starvation. If all colonies in the state are like mine and those that I have examined in other apiaries, they are extremely short on stores. It takes lots of honey to winter bees in the south because we have so many days that the bees take flight. This costs bee energy and stores.

Our state fair has just closed. It was a great success, but the weather prevented thousands who wanted to attend the fair from doing so. If we had had clear weather I do not know what we would have done with the people, since nearly everybody planned going to the fair this year. Our system of highways is almost completed, which makes it possible for folks to go places in their cars that they could not go a short time ago. It also makes it possible for the beekeeper to expand by having out-apiaries that could not have been considered in the past. The Fair Association certainly did well for the beekeepers in that they made glass cases for the honey and gave us a prominent place to exhibit it. As superintendent of the apiary department, I arranged lights behind the honey in the cases which did indeed attract attention. Also we had space for the supply dealers, and provided a book for the beekepers to register. In fact, we did all that could be expected in a department of this kind.

Our State Beekeepers' Association held its annual meeting during the fair. All

officers were re-elected. A change in the dates of the meetings was made so that we are to hold two meetings each year, one in March and one in September. The March meeting is to be held in Little Rock.

I wish I knew what to say that would cause all beekeepers to really and truly support their national association, their state association, and the state fairs, and read the bee papers. J. V. Ormond.

Elba, Ark.

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In Alabama—The fall honey flow here was a complete failure because of the drought. From February to September, inclusive, the precipitation was below normal each month, and usually considerably below normal. The total amount during this eight-month period averaged for Alabama 21.43 inches, only 2.68 inches per month, or at the rate of 32.16 inches per year.

This is the lowest amount of rainfall for an eight-month period since the beginning of statewide records in 1884. August and September were very hot and dry, being the hottest on record for this time of year.

Many streams were dry, and wells that had never failed before were dry. In some cases people had to haul water several miles, and some farmers were obliged to drive their stock to water every other day, sometimes as far as three miles away.

The spring and summer honey flow was good, so bees are in good condition, strong in bees, and with plenty of honey; therefore prospects are good for an abundance of bees next spring to fill orders for package bees.

The past two years the fall honey flow was good, so a few beekeepers gambled on a fall honey flow this year, and extracted all honey above the queen-excluders. They are now feeding sugar for winter stores.

Because of the dearth of nectar it was almost impossible to requeen in August and September, so some of us are just now finishing up the work of requeening. The work can be done much faster now than earlier in the season because there is not so much brood and the bees are clustered in a small bunch, and by taking two or three combs from the center of the cluster the queen is easily found, often on the first comb removed.

The Department of Agriculture had a splendid exhibit of bees and honey at the state fair at Montgomery November 2 to 11. This was the first exhibit of the kind to be shown in Montgomery. The exhibit was in charge of our state inspector, Thos. Atchinson. J. M. Cutts.

Montgomery, Ala.

In Indiana—Scientists tell us that the spots on the sun vary the heat given off, and these spots are liable to cause extremes in heat and cold, to cause cyclones, earthquakes, and what not. If this is the case the sun must be a regular leopard this year for we have certainly had all the symptoms. We had an extremely early spring with hot weather in April. This was accompanied with a severe drouth. Then in May it turned cold with frosts. Rain fell in abundance in June. Then for a little while we had normal weather. July and August were hot, and September was the hottest September on record, the thermometer registering 100° a number of days. Likewise October was the coldest October on record, with heavy frosts and severe freezing weather and several snowstorms. Yes, altogether we had a freak season.

Some time ago I said that normal seasons are best for honey. For instance, it takes plenty of rain for smartweed, but if we have an excessive amount smartweed does not produce so much nectar. It takes hot dry weather to make blue vine, or dry-weather vine, as it is called, secrete nectar, yet in exceedingly hot dry weather it fails. This year it was too hot and too cold and too wet and too dry for most anything. Sweet clover showed its persistency by giving us the only honey flow we had, which, although sweet, was short.

I am rather glad that the weather that they used to have in Egypt in the days mentioned in the Old Testament have gone out of style, for I would not like to have seven lean years on a straight. As to the outlook for the future, I can say I never saw it better. The heavy rains coming at the right time have caused all kinds of clover seed to germinate, and I never saw such a fine carpet of both white and sweet clover as there is at present. Bees, as a rule, are short of stores. Many beekeepers who did not feed will lose heavily. The demand for honey has been light, but honey sales are increasing with the approach of cold weather. Jay Smith.

Vincenes, Ind.

* * *

In Western Ohio—The month of October was very unfavorable for bees, as the weather was rather cool with considerable rain; but the rain was badly needed. The condition of honey plants here is about normal.

Our farmers are beginning to realize that sweet clover is no longer considered a noxious weed. There are hundreds of acres of sweet clover grown in this locality at the present time, and the plant is

in a very good condition for the winter. Beekeepers should be encouraged, as the future never looked more promising. The most important thing now is for the beekeepers to talk more honey to the consuming public, and place honey where it should be—on every table, as nature's best food.

Bees are mostly packed for winter, and colonies are strong in bees and well supplied with stores. I am looking for quite a winter loss among careless beekeepers, as colonies that were not supplied with extra stores will certainly not survive the winter. Our 700 colonies have been carefully packed and are in the best condition to withstand the rigors of winter.

I recently visited quite a number of beekeepers and find some very careless, leaving inner covers, queen-excluders, covers, and bottom-boards lying around the apiary. Bee equipment will not last long with such careless methods; but if kept in the dry and well painted it will last nearly a life time.

Honey sales to date have been slow, although quite a number of inquiries have been received. Several cars have been moved at 9 cents f. o. b. shipping point. I believe that, with the coming of colder weather, sales will be considerably increased.

The honey crop in this section of Ohio has been very spotted, some beekeepers reporting a good crop, while others report a failure; but the beekeeper who keeps his bees and equipment in good condition will be able to come back and make up for lost crops in a remarkably short time when conditions again become normal.

At a recent meeting of the Tri-County Beekeepers' Association the following resolution was adopted: "We, the Tri-County Beekeepers' Association, emphatically condemn the practice of putting up and selling to consumers a five-ounce glass of honey by beekeepers and bottlers." This is a very progressive organization, and any action taken always represents due consideration of the subject. We should be pleased to hear from others along this line.

According to present plans, before these lines are read the writer will be on his way to Florida, where we intend to spend the winter and forget the bees for a little while. Fred Leininger.

Delphos, Ohio.

* * *

In Western New York—The secretary and board of directors of the Western New York Honey Producers' Association believe that the coming meeting on December 1 and 2 at the natural science room of the library building, Buffalo, will be one of the most important ever held by this association. All members and others interested in the welfare of the industry are urged to attend, as very important new policies are to be discussed.

Following the very heavy but short honey flow of August, the weather here has been very cool and wet, resulting in no honey from goldenrod, asters, and Hubam clover, all of which were very abundant near our home yards. At the close of the August honey flow all supers were full of honey and the brood-chambers were full of brood. Brood-rearing ceased early in September, and consequently bees going into winter are old in days but young in amount of work they have performed.

Brood-chambers were practically empty and we have put tons of sealed stores from the supers into the brood-chambers for winter. In our own practice we very seldom feed sugar stores. Personally I question whether it is good business to do so. The occasional losses from poor-quality natural stores do not amount to enough to pay for the added cost of labor of feeding sugar every year as a preventive. Probably this does not hold true in every locality. But in my 25 years' experience I can lay losses in only two seasons to the account of poor stores. And we are sure that the prevention of losses for these two years would nowhere near pay for the labor of feeding for the 25 years.

Then there are also other angles to the feeding of sugar. It is a rather embarrassing and difficult matter to explain to the average consumer why sugar is a better food for bees and honey for humans. Every pound of sugar fed to bees releases that much more honey to an already depressed market.

The wet weather has brought on the clover from last spring's seeding remarkably well. While earlier in the season there was no clover at all to be seen there is now an average of probably nearly 50 per cent of normal.

The November market page reveals a wide variance in carlot prices being offered throughout the country, California reporting highest at 17 cents and Florida lowest at 7½ cents, a difference of 9½ cents, with other states reporting all the way between. Variation in quality undoubtedly accounts for some of it, there being a difference of 3½ cents in the reports from our own state. The writer reported the lowest, 8 cents, which was on buckwheat honey, this being the only kind available in carlots in this part of the state, while the others were probably reporting on white honey. I wonder if it would not be possible and a good thing for the market reports to designate the general color grade of the honey being

reported by letters as W. (white), L. A. (light amber), and A. (amber).

Ransomville, N. Y. H M. Myers.

* * *

In Ontario—Weather conditions throughout Ontario during the month of October were very bad for all kinds of outdoor work, including the feeding and packing of bees for winter. The amount of rainfall was unusually heavy and during the last week in the month the thermometer fell to ten above zero three mornings in succession.

While such unseasonable weather was bad for the beekeeper, other branches of agriculture suffered much more, as it meant actual loss of valuable products in many cases. Tens of thousands of barrels of the best apples, such as Spies, Greenings, and Baldwins, were frozen on the trees and are absolutely useless for any purpose. So, instead of the heaviest apple crop on record for Ontario, unseasonably cold weather has reduced the crop far below the average and apples have taken a big jump in price since the freeze. Many potatoes were also frozen in the ground, and other root crops injured in many places. So if the beekeeper did have to do his fall work under unpleasant conditions, his actual loss was nothing as compared to those engaged in other rural occupations.

Personally, we had the bees all fed and about all packed for winter by November 1, but, as already intimated, much of this work was done under very unpleasant conditions. Twice we had quite a heavy snowfall, and handling hive covers with snow on them several inches deep is not conducive to comfort, especially when the snow is getting into one's shoes and filling the pockets of his coat. However, it is all past now and seemingly we are none the worse for our experiences. After all, it requires real cloudy weather and lots of it to make us appreciate the real beauty of the sunshine.

When my notes were sent in for the October issue we were busy feeding the bees, and at that time I intimated that our feeding bill would be heavy. Well, it is all over now, and we find that it is the heaviest we have ever had so far as the quantity of stores is concerned. But sugar was cheaper than usual, so the actual cash outlay has been heavier in some seasons when sugar was much higher in price. Colonies were light in stores and in many cases exceedingly strong in bees—so strong, in fact, that I noticed clusters at the entrance in ten-frame Langstroth hives in the morning when the thermometer was within 12° of zero. Whether there are enough stores to carry through so many bees remains to be seen, but colonies had all they could store in the combs, with no "winter nest" on November 10.

In the last issue I stated that five ten-pound pails of food is as much as colonies in ten-frame Langstroth hives will take, but after writing that I found a number that took six pails. No doubt the amount of pollen in combs accounts for the difference, as colonies were very populous in each case and the hive-capacity was the same.

According to a recent report in Toronto papers, it is estimated that the total honey crop for Canada this year will be around 21,000,000 pounds. As we have a population all told of less than ten million, that means a production of a little over 2 pounds per capita. What is actualy consumed by this ten million can only be learned when export figures are available. At any rate, a large amount of this honey is being exported; and if it were not being sent out there is no question but that honey would be a drug on the markets, as thousands never taste honey, to say nothing of using around two pounds each per year. True, many families use large quantities of honey; but unfortunately many others scarcely ever buy honey; and even if they do so now and then, it is bought as a treat or medicine rather than as a staple food.

So far as I can learn, honey has been moving well all fall. As the quality is very good, as a rule, this is no doubt a powerful factor in helping along sales. Personally, all our honey was sold this year before a pound of it was produced, paradoxical as such a statement may sound. Purchasers report brisk demand and were anxious for delivery of the full quantity contracted for, and so far as I have learned they are satisfied with the product. While we appreciate the value of a large retail trade, unfortunately it seems impossible for us to give that trade justice as we are often too busy to attend to it properly. So of late years we make a practice of wholesaling practically all of our production.

I have not learned the exact dates of the Ontario Convention for this year, but presume that notice will soon be given and that it will be held in Toronto at Prince George Hotel as usual. No doubt there will be the usual large attendance as the crop was good this year and beekeepers will feel like spending a bit of their cash by way of showing their optimism. Good crops or poor crops, the convention is always well attended, and this year will not likely prove an exception in that respect. J. L. Byer.

Markham, Ont.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Advantages of Food-Chamber My colonies with food-chambers gave all the way from 30 to 75 pounds more than those without. When the food-chambers are on in the spring the colonies seem to refill them before those without food-chambers even start storing. They put the honey in the food-chamber, and the queen fills the brood-combs with eggs to the top-bars. Then when the honey flow starts I lift the food-chamber up and place my super on the brood-chamber, then replace the food-chamber on the top. The bees have been used to going above with the honey and start at once on the super. Otherwise they don't like to go into the supers until the food-chamber becomes crowded, which often causes them to swarm. The food-chamber saves more work and worry than the extra cost amounts to. L. Lawrence.

Springfield, Minn.

A September Swarm Last year I noted the "wisdom" of some bees that set up housekeeping in a hollow tree on the bank of the Chenango River, only to be flooded out a few weeks later by a fall freshet that rose so high it went over the entrance-hole in the old trunk.

This year I saw a still more evident proof of the "wisdom" of the bees. Reverse English on the word "wisdom," please.

The Friday before Labor Day a swarm of bees lodged in a small maple tree here. The bees were not hived and remained there in the open for 10 days, when I saw them again. They had drawn leaves together and were going to the field and evidently making comb. We then had heavy storms, cold nights, and other discouraging things. The bees, after 15 days of it, packed up and swarmed into a house that was being constructed near by. They got into an open attic window and into an open space up under the roof. There they parked themselves, with the fall flowers about gone and not a chance in the world to survive. They left behind in the cluster of maple leaves a bit of comb. The bees were nice yellow Italians and looked as if they had more sense than to swarm out in that way, in the face of on-coming fall. It all looked foolish, but of course we do not know what they fled from in the first place. George Gilbert.

Port Dickinson, N. Y.

Favors Bees on Combs We know that American foul brood is easier transmitted in combs than in artificial food for bees, and that the states that have become infected with this disease have gotten it by buying from states that did not furnish clean health certificates, or that have failed to adopt laws that properly control this disease. The most effective measure that has been taken in Louisiana is burning all contaminated material and bees. This is a state law and any Louisiana beekeeper violating this act is under penalty of law. We are for laws and strict regulations that protect us and others from American foul brood, but we are against laws prohibiting shipping bees on combs into other states when accompanied by clean health certificates, while there are no laws prohibiting the shipment into our state of honey that has nothing to show freedom from disease. Shipments of honey are made daily into our ports in damaged containers which of course are a source of disease to our bees, if the honey contains disease, and it is a recognized fact that disease can be spread by honey. The shipper, the express company, and the buyer find that bees shipped on natural food are more satisfactory on account of safer and better delivery, as indicated by the request of customers and expressions from carriers.

The beekeepers of some quarantined states evidently are not informed as to their laws. I have received orders for bees on combs from these states.

Hamburg, La. Oscar Mayeux.

[According to information from the various state officials, the states which prohibit the importation of bees on combs are Alabama, Arizona, California, Montana, North Dakota, Texas, and Wyoming.—Editor.]

Soaking Combs in Warm Water In my first experiments with the water-formalin solution I placed the combs in cold water 24 hours before treatment to wash out the honey. Later I placed them, after the honey was extracted and brood-cells uncapped, in warm water at about 95° to 100° F., leaving them in this warm water for 20 to 30 minutes, or just long enough to warm up all honey. They were then taken out and shaken by hand, though they might be put into the extractor and this honey and water extracted. They were then placed in the cold water

24 hours before they were put into the sterilizing solution. I think there is where one great trouble is. Honey is left in the cells and cold water will not remove it, therefore the solution does not penetrate to the bottom of the cells, and the disease re-appears. There were two colonies which showed a very few cells of disease in the combs that were not first put into warm water, while the combs that were put through the hot water treatment before being sterilized have failed to show any reappearance of disease. I have 13 colonies that were treated in this way that are all free from disease. I have a complete record of my experimental work which covers over one year's time, which proves very interesting to me to read over from time to time. O. F. Fuller.

Blackstone, Mass.

Louisiana Fights Brood Diseases Louisiana is free from disease except near Shreveport in the northern part of the state, where foul brood comes in from states to the north in shipments of bees on combs without health certificates, and at New Orleans, where it is shipped in with infected honey. During the unloading process, the honey from damaged containers is continually exposed to the bees, which literally swarm over it and carry it back to their hives. Every year colonies infected with foul-brood are found in this vicinity, and each and every one of them is burned—bees, honey, comb, and hives—without moving them from their stands. The following year the same thing occurs merely because foul-brood honey is shipped into New Orleans. It was also shown that, since Louisiana has had a system of inspection, no cases of foul brood have been shipped out of the state with bees on combs accompanied by a health certificate. We think that no other state has a better record than this, and we feel that such a record is entitled to some consideration from the framers of quarantine laws against the shipment of bees on combs.

Baton Rouge, La. Henry A. Stabe.

Inducing Bees to Requeen Themselves Two beekeepers have recently mentioned to me the possibility of automatically requeening by the supersedure method, following the major honey flow, at a time when superseding would not interfere with securing the maximum crop of honey. This sounds interesting, because requeening, from the standpoint of labor and expense, is one of the costliest operations in apiary management, and it is generally conceded that queens reared under the supersedure impulse are the most desirable. How, then, can the bees be induced to supersede old queens in late summer or early fall, when requeening is desired.

The theory advanced is that a food-chamber full of honey should be left on each colony after the surplus honey is removed. In many localities there is a dearth of nectar for a few weeks following the major honey flow, and if all of the honey is removed down to the brood-chambers the queens will practically stop laying. When a full food-chamber is left with each colony after the surplus honey is removed, the queens that are not worn out continue laying, but the old queens that have lost their vitality slacken in their egg-laying. The bees are not slow to detect failing queens, therefore supersedure is likely to occur.

Medina, Ohio. M. J. Deyell.

Handling of Apis dorsata Although I come across numbers of natural swarms of *Apis dorsata* in flight for pastures new, I pass on with all due respect. About a month ago I rushed back to my bungalow for a camera to snap a large swarm located three feet from the ground, but they took flight just as I was getting ready. Many of the letters I have received suggest dealing with these bees in the ordinary standard hives, whereas an ordinary colony would fill two outside boxes of the the standard hive, not leaving any room for frames. I am afraid a special hive would have to be constructed to accommodate these giants of our forests. I took several swarms on my return from England and kept them but a little while in turned-over packing-cases. They were always a danger to approach without veil, etc., and although one colony did actually start building comb I was glad to see the last of them when a "Kada" (jungle tribe who file their teeth to points like a V) was put on to destroy them. I found they would persist in hanging around the little bees *Apis indica*, and not only rob them out of house and home, but try their same tricks on me in my home. These bees are migratory. Now that our monsoon rains are over they are migrating back to the southwest, and in another four months our jungle tribes will begin to prepare for their loot, by burning the colonies out on dark nights. They then crush the combs, together with brood and honey, hence their honey for sale.

Valpari P. O., India. P. E. Achard.

XUM

Upper—Meeting place of the First Chilean Apicultural Congress. At the left is Don Juan Barriga, president of the Chilean Apicultural Association. At the middle is Don Dario Bonillo Vicunia, Chief of the Apicultural Experiment Station, and at the left is Don John Wolffsohn, a learned naturalist and General Secretary of the Congress. Middle—First Chilean South American Congress, held in Santiago, May 21, 1925: a partial view of the meeting. Lower—An apiary in Mexico with aqueduct in the background. Each hive is set on top of a post.

GLEANED BY ASKING

Geo. S. Demuth

Wintering in Room of Dwelling

Question.—Would it be advisable to screen the entrances of the hives and put the bees into an upstairs room in the house for winter?

West Virginia. M. W. Parks.

Answer.—No. As soon as bees discover that they are confined to their hive they begin to worry and try to get out. This would soon result in the death of the colony brought about by the excessive activity. Furthermore, unless the temperature of the room could be kept nearly constant, somewhere between 40° and 50° Fahrenheit, the bees would not winter well. During a spell of warm weather the room would probably become too warm, causing the bees to become very active, and during cold weather it would no doubt be too cold unless heated artificially. For this reason a cellar is much better than a building above ground for wintering bees indoors. In your locality you will no doubt have better results by wintering the bees outside packed in double-walled hives or in winter packing-cases.

Large Entrances for Cellar Wintering

Question.—Would you advise using the deep side of the bottom-board or the shallow side, when wintering bees in the cellar? Also, is it necessary to put on top packing to absorb moisture when wintering bees in the cellar?

Michigan. Maurice Geary.

Answer.—If the cellar is warm, that is, between 45° and 50° Fahrenheit, and the colonies are strong, it is well to have the deep side of the bottom-board up and leave the large entrance wide open. On the other hand, if the cellar is cold or the clusters are small, it is better to use the small entrance. Most beekeepers, instead of reversing the bottom-boards, leave the deep side up throughout the year, then use an entrance-closer when needed. If the cellar temperature stays between 45° and 50° it should not be necessary to provide for upward ventilation, since the inner walls of the hive would then remain above the dew-point so that no moisture would condense inside. Under these conditions the moisture given off by the bees will pass out through the entrance in vapor form. The best remedy for trouble from moisture inside the hives in the cellar is to raise the cellar temperature sufficiently so that there will not be any condensation of moisture in the hive.

Arrangement of Entrance for Outdoor Wintering

Question.—Should the ventilating-tube in the Buckeye hive be corked during the winter?

Ohio. L. A. Snyder.

Answer.—In some cases it is better to close the lower entrance entirely and leave the ventilating tube open during the coldest weather. The ventilating-tube, being located above the regular entrance, is not liable to be closed by dead bees as might happen with such a small entrance below. For ordinary winter weather it may be best to use the small opening of the entrance-closer and leave the ventilating-tube open.

Colonies Fail to Store Surplus

Question.—Two of my ten colonies of bees failed to store any honey in the supers. Is this because of some abnormal condition of the colonies, or will it all come right another season by letting the colonies alone?

Pennsylvania. H. W. Berkey.

Answer.—There are so many conditions affecting the spirit with which bees work during the honey flow that it is often difficult to tell whether a failure to store a normal crop of surplus honey is due to inferior stock or some condition or set of conditions causing the bees to work with less vigor. This is one of the difficulties in the way of selection in breeding. Certain colonies may forge ahead during the honey flow and store a larger surplus than others in the apiary because of more favorable conditions which stimulate the bees to work with greater vigor, even though the stock may be no better than the others and may even be inferior. To select the queens of these colonies as breeders may be a mistake, unless the history of the colony for the entire season is known and allowance is made for factors which influence the spirit with which the bees work. On the other hand, when measured only by the amount of surplus honey produced without considering the other factors the best queen in the apiary may be condemned on account of low production when the fault was that of conditions instead of that of stock. For this reason it is not safe to select a breeding queen simply because her colony gave a large surplus for a single season, especially if careful observations have not been made in regard to the history of the colony throughout the entire season.

Upward Ventilation in Outdoor Wintering

Question.—In wintering bees in packing-cases is it necessary to leave the hole in the inner cover open with a wire screen over it so that moisture can escape from the cluster, or should the hole be covered?

Illinois. Roy Henson.

Answer.—Whether upward ventilation is beneficial or not depends upon other conditions. In your locality, southern Illinois, colonies well protected in winter packing-cases or in double-walled hives should not need upward ventilation, but 200 or 300 miles further north there might be trouble with condensation of moisture within the hive when sealed

covers are used. In other words, in localities where the ordinary packing is sufficient to keep the inner walls of the hive warm enough to prevent condensation, the moisture will pass out of the entrance in vapor form. Upward ventilation is beneficial in case there is not sufficient packing to keep the inner portion of the hive above the dew-point, and in localities where it gets so cold that it would not be practical to put on enough packing to prevent condensation in the hive. When upward ventilation is provided, care should be taken to prevent the movement of warm air out of the hive. It would be better to cover the hole in the inner cover with a piece of canvas instead of a wire screen to prevent the escape of warm air.

Wintering in a Greenhouse

Question.—Would it be advisable to house my bees for winter in a lean-to greenhouse which is unheated and located on the east side of the garage? H. C. Boldt.
Michigan.

Answer.—It is very doubtful if the bees would winter well in this greenhouse on account of the great fluctuation in temperature which would cause the bees to be abnormally active on warm days on account of the high temperature under the glass. The sudden change to low temperatures during the night and on cloudy days would probably also be detrimental. The colonies will no doubt fare much better if left on their summer stands either in double-walled hives or single-walled hives packed in winter cases. If you desire to winter the bees inside, it will be better to put them into a dry cellar in which the temperature can be kept somewhere between 45° and 50° Fahrenheit throughout the winter. The cellar should be kept dark in order to keep the bees quiet.

Preventing Granulation in Chunk Honey

Question.—I find my trade going more to chunk honey every year in spite of all efforts to prevent it. This is all right in warm weather, but not in cold weather on account of granulation. Is there any harmless legal way of preventing granulation?
Illinois. J. J. Hollowell.

Answer.—Supplying chunk honey with extracted honey poured over it to dealers during cold weather without considerable trouble from granulation is difficult. You can greatly reduce the trouble by keeping the frames of comb honey stored in a warm room, or at least in a room in which the temperature does not vary greatly and not cutting it out of the frames until needed. The extracted honey that is poured over the chunks of comb honey should be heated to 150° or 160° Fahrenheit to be sure that all crystals are completely dissolved, then permitted to cool sufficiently so that the wax in the combs will not be melted when it is poured over the comb honey. The honey thus prepared should be sold where it will be consumed within a short time, for even with these precautions there will be trouble from granulation if it is exposed for long to varying temperatures. It would not be advisable to add anything to the honey to prevent granulation for if this is done it will be necessary to so state on the label and this would cause your customers to become suspicious concerning the purity of the honey in other respects.

Moving Bees During Freezing Weather

Question.—Can I move colonies of bees which I have purchased during freezing weather, or will it be advisable to wait until spring? A. B. Silliman.
Iowa.

Answer.—Bees can be moved during freezing weather without perceptible injury to them. The entrances should be closed with pieces of wire screen and the moving should be done with the least possible disturbance. The screen should be taken off immediately after the hive is on its stand in the new location so that the colony will quiet down as soon as possible.

Entrances Closed by Sleet

Question.—Do large commercial honey-producers who have several out-apiaries go out after a sleet storm to open up the entrances of the hive? Frank F. Johnson.
Indiana.

Answer.—While there are conditions under which colonies may smother because of a sleet storm, if the bees are wintering well they require such a small amount of oxygen that the entrances could be entirely closed for some time provided the bees do not discover that they are confined. The trouble comes when the bees make this discovery and begin to worry in an effort to get out. If ice forms over the entrance when the bees are quietly clustered it probably does no harm, especially if it is melted away again within a few days. Bees that are wintering poorly because of poor stores or lack of proper protection are often restless, and such colonies would quickly discover their confinement; but colonies that are wintering well would be slow to discover that the entrance is closed when the weather is cold enough for a sleet storm. It is doubtful if many extensive honey-producers find it necessary to go to the out-apiaries to clean out the entrances during the winter

Honey Discolored in Dark Combs

Question.—If white honey is stored in combs which have had brood reared in them several times, is the honey darkened from these combs?
Pensylvania. W. F. Schelly.

Answer.—Honey is slightly discolored when stored in old brood combs. The discoloration is so slight, however, that it is usually disregarded. In producing honey for exhibition purposes it is well to select only new combs, or at least combs that have not had brood reared in them.

JUST NEWS
Editors

The beekeeping section of The American Association of Economic Entomologists will meet on December 30 during the general meeting of this association at Kansas City, Missouri.

Prof. Dr. Y. Tokuda, in charge of bee culture, Imperial Zootechn, Experiment Station, Chiba, and Imperial University, Sapporo, Japan, is in this country for the purpose of studying American methods in beekeeping.

Mr. and Mrs. George Hummer, of Prairie Point, Mississippi, were killed in a railroad accident at Victoria, Miss., on October 26. George Hummer was a member of the beekeeping firm of Geo. A. Hummer & Son.

The Illinois State Beekeepers' Association will hold its annual meeting at Springfield on December 8 and 9. Further particulars in regard to this meeting may be had by writing to M. G. Dadant, Secretary, Hamilton, Illinois.

The Iowa Agricultural College at Ames, Iowa, is offering a short course in beekeeping, January 4 to March 19, 1926. Details in regard to this course can be had by writing to Prof. F. B. Paddock, Iowa Agricultural College, Ames, Iowa.

The Iowa State Beekeepers' Association will hold its annual meeting at Des Moines, Iowa, December 3 and 4. Information regarding the date of this meeting was received indirectly and too late for announcement in the November issue.

The American Honey Producers' League will hold its annual meeting in Cincinnati some time in January. Information as to the exact dates for this meeting has not as yet been received at this office, but will be announced in the January issue.

The Michigan State Beekeepers' Association will hold its annual meeting at Lansing, Michigan, on December 10 and 11. Particulars in regard to this meeting may be had by writing to Prof. R. H. Kelty, Lansing, Michigan, who is secretary of this association.

The University of Minnesota announces a beekeepers' short course to be given over the radio from Station WCCO, Minneapolis, during December and January. Enrollment cards giving all details will be sent to applicants on request. Address Extension Division, University Farm, St Paul, Minnesota.

The Ontario Beekeepers' Association annual convention will be held in the Prince George Hotel, Toronto, December 1, 2, and 3. Dr. A. P. Sturtevant, of the Bee Culture office at Washington, and R. B. Willson, of Cornell University, are featured as the two outside speakers.

The Western New York Honey Producers' Association will hold an important meeting on Decenmber 1 and 2 at Buffalo. It is announced that the directors have in store a big surprise for everybody at this meeting, a matter that will be of interest to every beekeepers' association in the United States.

The report of the State Apiarist of Iowa for the year ending December 31, 1924, is now being distributed. In addition to the report of the work of the state apiarist this publication contains 24 papers by various beekeeping authorities, thus making it a veritable storehouse of information for beekeepers.

The first donations to the Cornell Beekeeping Library were received early in February of this year. Up to November 1 the accessions by gift numbered 1780, coming from 105 persons living in 23 states and 10 foreign countries. The acquisition of books which were formerly the property of men prominent in the development of beekeeping is one of the most important features of this library, and such collections have been received in about 40 cases.

The schedule of beekeepers' meetings in the western states announced last month has been slightly changed. The following are the dates according to latest information: Lincoln, Nebraska, January 5; Thermopolis, Wyoming, January 7; Billings, Montana, January 11 to 13; Washington Beekeepers' Association (place not yet announced), January 14 to 16; Oregon Beekeepers' Association (place not yet announced), January 18 to 20; California Beekeepers' Association (place not yet announced), January 21 to 23; Salt Lake City, Utah, February 1 to 3; Yankton, South Dakota, February 5 and 6; Fargo, North Dakota, February 8 to 10. Jas. I. Hambleton, of the Bureau of Entomology, Washington, D. C., is planning to attend each of these meetings and arrangements are being made to secure Jay Smith, Vincennes, Indiana, as a speaker on this circuit of meetings. Editor Demuth of this journal expects to attend the meetings in Nebraska, Wyoming, and Montana in January as well as the meetings in Illinois and Michigan in December, and hopes to meet and shake hands with many of our readers at these meetings.

A. I. Root's Story of His Own Life

Whatsoever thy hand findeth to do, do it with thy might; for there is no work, nor device, nor knowledge, nor wisdom, in the grave, whither thou goest.—Ecc. 9:10.

My first building for bees was a winter repository that I built in the fall of 1869. The walls were packed with sawdust and there was a complete ventilating scheme to provide fresh air.

I had a stone foundation laid, 10 x 14 feet, with two rows of brick on top, with holes in opposite sides of the wall, made by omitting two bricks, to allow ventilation. Sawdust was packed under the floor and in the walls. The walls were made of 10-inch studding, to permit 10 inches of sawdust packing. We put a double window in one end and a double door in the other. The ventilator through the roof was 7 inches in diameter and extended just below the ceiling inside. The lower ventilator through the floor was simply a square box 7 inches across and covered with wire-cloth to exclude mice. A very small stove was ample to keep the room comfortable.

Bees Hum When Too Cold

As early as November of that year I moved in one rather weak colony to test the house. One quite cold night outdoors before I moved them in, the bees were making a very loud humming, such as weak colonies always make when they are very cold. In two hours after carrying them in they were so still that not a sound was noticeable unless the hive was disturbed.

Many had said that 5 inches of sawdust would be plenty, but in a building in which no help is expected from the sun I thought we should find fully as much trouble in keeping off the effects of the sun as in guarding against frost; and, even though the room were kept as dark as midnight, I did not expect the bees to be as quiet as they should be unless the temperature were never higher than 40 or 45 degrees. Whenever we were not able to maintain such a temperature, I expected to set the bees outdoors.

By the 20th of November I had put my 46 colonies inside the bee-house. On account of the bad weather I am sure that it would have been better if I had put them in about a month earlier. The day we put them in happened to be quite cold, and as I did not want the caps on I took them off and left them on the summer stands. Most of the colonies behaved quite well, although the hybrids made up their minds that they would stay where they were. They had been extremely cross all the season, and positively objected to any assistance whatsoever. From one of them I removed the cover, thinking that the freezing air would drive the bees down among the combs; but after leaving them thus until all the rest had been taken in I decided they would have to be treated like refractory children and put in by main strength.

Hybrid Bees Refuse to Become Quiet

I am not in the habit of being intimidated by bees; but the battle array on top of the frames was rather fierce looking, and, when I approached, the bees came more than half way to meet me in an onslaught much like that of a young hailstorm. Smoke was of no use, as they seemed to be all out of the hive before I got within ten feet; yet I tried it and think that for almost the only time the fumes of tobacco seemed to have no terrors for the bees. I might smoke them until they lay on their backs, but the moment I stopped blowing they pitched in with fresh vigor until finally, when I lost all patience and carried the hive in, letting the bees come along or stay behind, as they liked, I had about the fairest exhibition of real hybrid bee fury that perhaps had even been displayed. They buried themselves in my shoes, trousers, coat, vest, hair, collar, waistband, and everywhere else. None of them got lost as they were so busily engaged in bestowing their whole attention on my precious self. Thus we all got into the bee-house, but instead of taking their places orderly in a row, as I had planned they should, and very particularly desired that they should just then, they pitched in more furiously than ever until I began to think I would rather take a back seat and be a spectator a while.

Well, these bees raised such a howling that I really began to fear that the bee-house was going to enjoy anything but quietness, and the other colonies as well seemed to be rapidly getting demoralized. I left the door open on cold nights until the thermometer went down almost to freezing, still the bees persisted in promenading constantly on the tops of the

frames, scolding away worse than a lot of sitting hens.

Elisha Gallup, I noticed, was advising more ventilation for bees in winter. As I had covers off of the worst colonies and the entrances all open, I did not know any better way to ventilate unless I put the hives in the middle of a ten-acre lot with the bars down.

Finally my business became so pressing at the approach of the holidays that I had no time to see to the bees. After they had been neglected about a week I was surprised to find them quite orderly, although the cross rascals did boil over the top as soon as I showed my face. I then went away and shut them up in total darkness. After this I slipped in quietly about once a week and for the next four weeks the thermometer did not vary one degree from 40 degrees, although the weather outside was cold and warm alternately. Once it was so warm for several days that I could hardly understand how it could be so much colder inside. I do not think the sun produced any effect at all upon the interior. The bees in most of the hives behaved just as Mr. Gallup had described in his writings. Were it not for their bright color and their moving when touched I might have thought them dead.

The 46 colonies of bees all wintered safely in the bee-house. On March 10 we put them on their summer stands, nearly as heavy as when they were put in. Some tried to pursuade me that they would be better if left in a little longer, but I thought they were better out of doors if properly protected and cared for.

Reviving a Starving Colony

We came very near having 45 colonies instead of 46, for after removing them from the bee-house on March 10, we had some of the coldest weather of the whole winter—2 degrees below zero. It was with a feeling of nervousness that I went around and gently tapped on each hive. Those that I feared most I tried first, of course; but when they all answered promptly, "All right," I began to breathe freely. However, my hopes went down to zero, and no mistake, on finding that one of the heavy hives, when rapped repeatedly, gave no response. It was indeed too true. I grasped the hive and rushed madly for the kitchen stove. With breathless sorrow I hung over that little domicile which only the night before was the happy home of peace and plenty, but where all was now still. No little yellow bodies moved so softly and quietly about, but all was cold and frostly in death.

On one side of the hive there was plenty of sealed honey, but the bees had eaten along to the other side where the relentless zero weather found them consuming the last on that side. I warmed them and re-warmed them, but not a movement until, after an hour or two, a few stirred a little, but that was all. I began to think I would have to give up, as I had tried the same thing the year before. My presence, too, was beginning to interfere with the preparations of the noonday meal. However, I could not give up yet. I visited the hive again, but this time with less determination than before, and slowly walked toward the bee-house. I built a fire in the little stove, I opened the hive, brushed the bees into a large pan (all I could get out of the cells) and warmed and warmed them. It was no use—only a feeble movement occasionally. At length the sun came out through the frozen air into the single bee-house window. I put the pan on the window-sill to help in looking for the queen I had not yet found. Was it my imagination or was the sun really reviving them? Yes, they were certainly coming to. After sprinkling them with honey and water they got brisk apace, and on standing a comb up in the pan they crawled on it as fast as they revived, and those in the cells towards the sun began to wriggle out. Before night I had the whole colony back in their hive; and a month later the pretty yellow queen was enlarging the circle of worker brood with all the matronly pride imaginable. So you see I came out ahead in the race of life and death and had the whole 46 colonies all right.

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Nuclei and queens. April, May, and June delivery. Pure Italian stock. Write for prices and guarantee. They will please you.

J. J. SCOTT, CROWVILLE, LA.

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Notices will be inserted in the classified columns for 7c per word. You must say you want your advertisement in the classified columns, or we will not be responsible for errors. For special conditions on bee and queen advertising please write us. Copy should be received by 15th of preceding month to insure insertion. Cash with copy if credit has not been established previously.

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HONEY AND WAX FOR SALE

SAMPLES free of white clover honey in 5-lb. pails. Henry Stewart, Prophetstown, Ill.

FOR SALE—Clover honey in 60-lb. cans. J. F. Moore, Tiffin, Ohio.

CLOVER honey in new 60-lb. cans. Sample, 15c. W. B. Crane, McComb, Ohio.

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FINEST clover honey in new 60-lb. cans. Sample, 15c. A. S. Tedman, Weston, Mich.

RASPBERRY honey, water white in color, 15c per lb. Irvin R. Van Devier, Medina, Ohio.

FOR SALE—Twelve tons light amber and amber in new sixties. J. N. Harris, St. Louis, Mich.

NEW crop white clover honey in 60-lb. tin cans. Write for prices. D. R. Townsend, North star, Mich.

HONEY for sale, any kind, any quantity. The John G. Paton Co., 217 Broadway, New York City.

EXTRACTED HONEY FOR SALE—Clover, buckwheat, any kind of package. C. J. Baldridge, Kendaia, N. Y.

FOR SALE—Comb and extracted white clover honey. Prices on request. Dr. E. Kohn & Son, Grover Hill, Ohio.

FOR SALE—Extracted and comb honey. North Dakota Bee Supply Co., 701 Center Ave., Moorhead, Minn.

NEW crop white clover honey in 60-lb. cans. Prices on request. Sundberg Bros., Route 3, Fergus Falls, Minn.

MY entire crop of fancy and No. 1 white clover comb honey at wholesale prices. Geo. Morrison, Mandale, Ohio.

FOR SALE—In 60-lb. cans, Alabama sweet clover honey, rich and ripe, 10c per lb. f. o. b. Joe C. Weaver, Cochrane, Ala.

WILD raspberry and milkweed honey in 5 and 10 lb. pails and 60-lb. tins. Write for prices. Hubbard Bros., Boyne Falls, Mich.

SOUR HONEY DEPT.

Things has turned just awful.

That doggone coon dog aint no coon dog at all, so he aint. He's a low down mongrel of a cur strain of no-account rabbit-chasin back-trackin mouth-slobberin whelp and he aint nothin else. Ab Lutz and me got started off early first coon huntin night feelin the finest. The night was awful dark and sort of misty and a great trackin night all together so it was. We were feelin so good bein as how it was the first coon night we had been looking forrards to so long and a new dog I trusted in utmost. Our hopes was the highest and our wives' hopes was with us too which aint usual especially when startin for fishin say at garden time in June. We had our pipes lit and goin allong torrards the woods feelin so good as I aforesaid and plannin how we would spend our coon fur money, Ab goin to have one third, me a third, and the dog standin for another third for me.

We got most to the first woods when all to oncet that dog let out a beller back of us right in middle of a pasture with no cornfield nor nothin like a coon country round. There was no trailin in that dog's beller, and I knew it first yelp out of him. He was chasin in full sight of his game, and Ab says: "It's sort of queer a coon would be layin in that grass we just come thru. I didn't know coons pastered out in meadows, and that dog has a new or improved way of runnin coon if his barkin is any indicashun."

Ab spoke in a sort of peeved way and sarcastick. What he said didn't help any anyway to dispell the awful thoughts that was fairly chillin me instanter. Just then that dog and whatever at all he was after turned a corner in the field and started strait down the fence row torrards us, and a comin express train speed or more so and Ab spoke up oncet again more sarcastick I thought than first and says: "That must be a awful awful fast coon. I have known coons to take to a fence afore now when hard run and right alongside a fence. But probably this aint a fence-runnin variety of coon but awful fast and racin our new coon dog on the ground just for fun."

The dog and whatever at all he was after kept a comin strait for us and then right past us as just when I turned on my new flashlight what I got of the hardware store that day promisin my very first coon skin sure for pay. The sight I seen was plain poison to me and as if I didn't feel bad enough Ab speaks up again sarcasticker than ever and says: "That is a bran new speshies of coon sure. He's got a little white bob-

FOR SALE—Clover, amber, and buckwheat extracted and comb. Write for prices. F. W. Lesser, Fayetteville, N. Y.

FOR SALE—Extra fine clover honey in new 60-lb. cans, two to the case, at $14.00. Adam Bodenschatz, Lemont, Ill.

EXTRA white honey in 60-lb. cans, 12c per lb. in large lots, f. o. b. Blackwell. F. C. Gentz, Blackwell, Wisconsin.

FOR SALE—Extracted, comb and chunk honey. Prices on request. Sample 15c. F. W. Summerfield, Waterville, Ohio.

FOR SALE—Comb and extracted white clover honey, guaranteed first class in every respect. J. F. Moore, Tiffin, Ohio.

FINE quality clover honey. New cans. Write for prices single case or more. Don Barrett, R. F. D. No. 3, Ann Arbor, Mich.

FOR SALE—Finest flavor clover extracted honey, 12c lb. in 120-lb. cases. Send for sample. T. J. Rowe, Northstar, Mich.

FOR SALE—Choice extracted honey, two 60-lbs. in case. Light amber, $13.00; buckwheat, $12.00. J. G. Burtis, Marietta, N. Y.

COMB HONEY—50 cases fancy clover, $5.00; 50 cases No. 1 clover, $4.00. Quantity prices made. L. M. Hubbard, Onsted, Mich.

NEW crop clover and buckwheat honey in new 60-lb. cans, 160-lb. kegs and 5-lb. pails. Write for prices. H. B. Gable, Romulus, N. Y.

FOR SALE—Light, amber and dark extracted honey in 2½'s, 5's, and 60's. Prices on request. O. H. Schmidt, Bay City, Rt. 5, Mich.

WHITE clover honey, new, 60-lb. cans, one to three cases, 11½c; 3 cases or more, 11c per lb. Sample, 20c. Hoehn & Honigford, Ottoville, Ohio.

FOR SALE—Choice white and light amber Michigan extracted honey in NEW 60-lb. cans, case or carload. Sample, 15c. David Running, Filion, Mich.

CLOVER and basswood honey blended by the bees. Color white, body fine. Prices upon request. State amount wanted. W. A. Jenkins, Rock Port, Mo.

GOLDENROD and buckwheat comb honey in 4¼ beeway sections for sale at reasonable prices. Quality very good. H. E. Crowther, Jefferson, Ohio.

HONEY FOR SALE in 60-lb. tins. Clover, crystallized, at 13c per pound; clover, liquid, at 14c per pound. Hoffman & Hauck, Inc., Ozone Park, N. Y.

NEW crop fine quality clover honey, $13.75 per case of 120 lbs., 2 cans to case. Let us supply you early. W. D. Achord & Son, 320 Howard St., Findlay, Ohio.

FOR SALE—No. 1 white comb honey, $5.00 per case of 24 sections; No. 2, $4.00 per case; dark comb, dollar less; dark extracted, 9c lb. H. G. Quirin, Bellevue, Ohio.

FOR SALE—Fine quality light extracted honey in 60-lb. cans, 2 cans per case. State how much you can use and I will quote price. L. S. Griggs, 711 Avon St., Flint, Mich.

FOR SALE—Clover or buckwheat honey in 60-lb. cans, two to case, 12 and 10 cents; 5-lb. pails, $1.00 plus postage for 7 lbs. Woodward Apiaries, Clarksville, N. Y.

FOR SALE—10,000 lbs. choice clover honey in 60-lb. cans, 11½c per lb.; comb No. 1, $4.75 per case, f. o. b. here. John Burghardt, St. Paul, R. F. D. No. 2, Neb.

FOR SALE—White clover comb, also extracted. Send 15c for sample, saying how much you can use and will quote attractive price. Chris Holm, Genoa, Ill.

tail and long ears and awful light color and jumps about 20 feet to a jump and wont tree with a dog five feet ahind him. When we get him we can get any price we ask for him of a muzeum as bein a new speshies of coon. No other coon dog nowheres ever found a new speshies of coon first half hour of first coon night anywhere."

I couldn't bear Ab's talk no longer and was beginnin to hate him awful, so I grabbed a piece of rail and started down that fence row after that dog in awful ernest. When I got to the corner by the woods there was that varmint of a low down cur of a whelp a diggin at a mouth of a hole and lettin out yelps and slobberin at the mouth as he bit off roots to help hisself dig into that rabbit hole. I dissuaded him some with the piece of rail and was discussin rabbit huntin as versus coon huntin with him all around a fence corner when Ab comes up and says: "Don't you know you oughtnter discourage a coon dog that a way from findin new speshies of coons? How's a dog goin to feel when he sees a new speshies of coon from time to time if you argue with him about it with a piece of fence rail? He may get all discouraged as a new speshies finder."

I was hatin Ab worser every minute. Then he proposes we go over to the Big Hill woods where he said there was only regular old style coons and lots of em and my new dog would do good for we could get his mind off new coon speshies praps where there warnt none.

Ab couldnt speak only sarcastick and bitter, and I was hatin him worse all the time as we went along gloomy toward the Big Hill woods, me havin the dog on a chain now leadin him. I couldn't help refleckshuns as to how big I had talked my new dog up to Ab for six weeks, and tellin Ab as how it took me to pick a coon dog. Ab seemed to want to talk about it all them two long miles to the Big Hill woods but I didn't. A fair sample of what he said was when we were crossin the last big meadow just afore gettin into the woods and he says: "What a pity to keep that dog on a chain when goin thru a new speshies section like this with such a dog as what is a great specialist on new speshies." I had got just permanent silent by that time and yanks that dog along and over the wood fence and right into the middle of them big woods afore I slipped his chain again. There we waited. It warnt five minutes till that idiotic son of a varmit diggin cur was yelpin after another rabbit over in the big meadow we just come thru, a barkin his fool head off and runnin his legs off.

"Ab," says I, "he ain't true. He's a

FOR SALE—New crop clover honey, finest quality, put up in 60-lb. cans, also 5-lb. pails. Write for prices. W. M. Peacock, Mapleton, Iowa.

CHOICE clover honey, two new 60-lb. cans in case, 10 cases, 10½c; larger amount, 10c; entire lot, 6300 lbs., 9½c per lb. Henry A. Meyer, West Point, Neb.

FOR SALE—Fine extracted clover honey in 60-lb. cans. Thoroughly ripened; also light amber. Price on request. Sample, 15c. Leland Farnsworth, Davison, Mich.

NORTHERN Michigan fancy honey in 5-lb. pails, raspberry blend, $7.80 per doz., and amber, $7.20. Sample, 20c. Lewis A. McIntire, Boyne City, Mich.

BUCKWHEAT honey in 5 and 10 lb. pails, 60-lb. cans, 160-lb. kegs, fine quality, well-ripened honey. Write for prices. E. L. Lane, Trumansburg, N. Y.

FOR SALE—Clover honey in 160-lb. kegs; buckwheat in 160-lb. kegs; clover and buckwheat blend in 60-lb. tin cans. Write for prices. Geo. M. Sowarby, Cato, N. Y.

HONEY FOR SALE—Buckwheat and white clover in 60-lb. cans. Wholesale a specialty. Get our price before you buy. Roscoe F. Wixson, Sales Dept., Dundee, N. Y.

E. D. TOWNSEND & SONS, Northstar, Michigan, the largest extracted-honey producers in the central west. We wholesale our entire crop in 60-lb. cans. Your patronage solicited.

FOR SALE—Choice fancy 1925 crop white clover extracted honey in new 60-lb. cans. 11½c. Sample, 10c. Amber, 11c; also some comb honey. Write for large-lot prices. Edw. A. Winkler, Joliet, Ill.

FOR SALE—Buckwheat extracted honey in 60-lb. cans. A few cans extracted honey for baking purposes. 75 cases comb mixed clover and fall flowers. Bee-Dell Apiaries, Earlville, N. Y.

FOR SALE—Honey in 60-lb. cans. Sweet clover, basswood, white clover, buckwheat, and other flavors. Tell us what you want. Beekeepers who need more honey for their trade, and solicitors should write us. A. I. Root Co. of Chicago, 230 W. Huron St., Chicago, Ill.

HONEY FOR SALE—Fancy white comb, $5.00; No. 1 white, $4.50; choice, $4.00; mixed, $3.75; buckwheat, $3.75; white clover extracted, 11c; amber, 10c; buckwheat, 9c. Comb honey packed in carriers of 6 or 8 cases. In cartons, 50c extra. C. B. Howard, Geneva, N. Y.

CLOVER honey, thoroughly ripened. Is thick and rich. Fine for table use. 3-lb. can, $1.00; 12-lb. can, $3.00, postpaid, 6 5-lb. pails, $5.00, not prepaid; No. 1 clover comb honey, $5.50 per case of 24 sections; No. 2, $4.50 per case, f. o. b. Delicious white clover chunk comb honey, 5 lbs., $1.45, postpaid. F. L. Barber, Lowville, N. Y.

HONEY FOR SALE—For the beekeepers whose supply may be short this season. We have the choicest extra quality sweet clover, fine white clover, alfalfa, some mesquite and a limited amount of orange that we can offer our friend honey-sellers who may be short. Also comb, all grades. Write for prices. The A. I. Root Co., Medina, Ohio.

RASPBERRY HONEY was left with the bees until thoroughly ripened is thick, rich, and delicious, unexcelled for table use. In new 60-lb. cans, 15c a lb.; 10-lb. cans by mail, postpaid, $2.50 each. We have some amber colored fall honey with a thick heavy body, the richest, sweetest honey we ever tasted, in 60-lb. cans for 10c a lb. A sample of either kind, 15c. Elmer Hutchinson & Son, Lake City, Mich.

rabbit chaser. I know it all now. It's awful. Think of all my condition financial with this whelp of a dog no good. I feel worser about it and will suffer ten times more'n you will, Ab. So won't you promise me never oncet again at all to mention a word about this whelp of a varmit? Please, Ab," says I, "rememberin our friendship of 40 odd year, rain or shine, for better or worse." Then I turned the flashlight on him, so as he could see me all saddened up as I was and I could see him my fishin friend of 40 odd year, and there a standin eye to eye in them silent dark drippin woods at 10 p. m. we looked strait into each other's eye balls. Ab got it all, realizin as he did how my whole financial struckshure had just tottered to nothin. The sarcastick faded complete out of his noble face and he says: "I promise never again," and all saddened up together and our arms on each other's shoulders we turned strait tail for home. Not a drum was heard and no funerrel notes, but it was worser even than that till we almost run right top of a good for nothin white skunk with proud arched tail and all ready. That cheered us up as how it wouldn't ordinary for I says Ab let's get part even with that dog. He says: "All right. That dog is built mental the same way at both ends, and will tie right into that skunk if we can call him up here. That's what you mean aint it?" Exactly and precisely I says. So we called that rabbit chasin whelp up and sicked him onto that innocent lookin semi-circler bunch of white hair. Sure enough he tackled it like as it was a long missin enemy. He overdone it some and as how me and Ab hadnt figgered, for the first jump after he connected he landed square atween us saddened friends, shakin that expirin but still functionin perfume sprinkler up both sides and all abaft us both. We was mostly keepin our eyes shut and hopin for the best. It didnt turn out that way. When it was all over me and Ab and that rabbit-chasin whelp of a cur and the dead skunk was all on even footin. Ab says: "It ain't any worse now than it was afore for it couldnt be." No says I we have that for comfort, and I says I see two providenshuls in this seemin latest catastrophy. "What's them?" says Ab. Says I I got some string. We will tie that expired skunk clean around that rabbit-chasin son of a whelp of a cur dog and take him and tie him to the porch settee of that man as what sold him to me as for a coon dog. "Righto," says Ab awful pleased. So we put right off to do it and done it that night, and was well satisfied with results. Then when we got turned straight

FOR SALE—300 cases of new crop buckwheat comb honey, at $4.00 per case. Will average over 22 lbs. per case of 24 sections. Write for prices in large lots. Chas. B. Hatton, Andover, R. F. D. No. 3, Ohio.

HONEY for sale. Buckwheat extracted, 120-lb. case, $12.00; 12 5-lb. pails, $7.20; fine No. 1 buckwheat comb, $4.00 per case in carrier lots. Prices f. o. b. Linesville, Pa., or Andover, Ohio. Paul D. Thompson, Linesville, Pa.

DETROIT HONEY JOBBERS—I still have on hand about 8 tons of our crop of choice clover honey in 60-lb. cans. Write for prices f. o. b. Detroit in lots of 500 to 2000 lbs. Earl F. Townsend, 109 Oak St., Wyandotte, Mich.

OUR HONEY BULLETIN sent on request. Quotes you advantageous prices on large and small lots. Shipments from our stock here or direct from the producer. White clover honey of heavy body, packed in 60's. Also some autumn. Send us a card today. The A. I. Root Co. of Iowa, Council Bluffs, Iowa.

COMB honey in cartons, 75 cases fancy buckwheat (13 oz. net or better), $4.00 per case 24 sections; 20 cases goldenrod mixed, 5 fancy at $4.00 and 15 No. 1 at $3.50 per case. Goldenrod extracted, 3 cases, 12 5-lb. pails, per case, $8.00; 1 case buckwheat, 6 10-lb. pails, $6.50 f. o. b. here. Noel J. Loucks, Springboro, Pa.

HONEY AND WAX WANTED

WANTED—Comb and extracted. J. E. Harris, Box 178, Morristown, Tenn.

WANTED—White clover basswood extracted honey in ton lots or more. J. C. Abbott, Northampton, Mass.

WANTED—White clover comb honey. Glass-front case preferred. E. W. Peirce, 345 Cliffwood Ave., Zanesville, Ohio.

WANTED—Basswood honey, half-ton shipments. Send sample and state price. J. K. Wolosevich, 913 W. Cullerton St., Chicago, Ill.

BEESWAX WANTED — Highest market prices paid. Cash or in exchange for supplies. Write us for quotation before shipping elsewhere. The A. I. Root Company, Medina, Ohio.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5c a pound for wax rendered. The Fred W. Muth Co., Pearl and Walnut Sts., Cincinnati, Ohio.

WANTED—A car or less quantity of clover honey in 60-lb. cans. Mail sample and quote lowest cash price for same; also send for my cut price circular on cans and pails for honey containers. A. W. Smith, Birmingham, Mich.

BEESWAX WANTED—We are now paying very high prices for beeswax, both cash and trade. Write us for quotations and we will be very glad to quote you f. o. b. Hamilton or f. o. b. your shipping point. Dadant & Sons, Hamilton, Ill.

FOR SALE

HONEY LABELS—New design. Catalog free. Eastern Label Co., Clintonville, Conn.

WRITE FOR OUR PRICES on printing before ordering elsewhere. Appeldoorn, Hamler, Ohio.

FOR SALE—Two gross 14-oz. honey jars, Duplex caps, $4.00 per gross. H. J. Avery, Katonah, N. Y.

MAKE queen introduction SURE. ONE SAFIN cage by mail, 25c; five for $1.00. Allen Latham, Norwichtown, Conn.

tail for home again Ab says: "What we goin to say when we get there—no coon and all this way?" I says Ab listen. There is just where the second providenshul comes in. We have got the best excuse on this one planet for sleepin in our respective woodsheds tonight. When they open the back door in the mornin they will shut it most awful quick again and holler from inside out to us their lovin husbands as we neednt come in the house atall till we get purified. We don't have to get purified do we Ab? and can't we meet up with more skunks all winter and continuous renew our proteckshun? Don't you see Ab how it will protect outside the domestic circle also and likewise? Is my hardware friend a goin to get so awful close to me continuous for pay for this here flashlight? Is my chicken feed merchant goin to fraternize with me much for his pay when I tell him I'll come down to his store and talk it over? and just so all the others? Cant you see Ab this is all a blessin in disguise?

Good noble old Ab my fishin friend for 40 odd year straitened up as if he shook off whole years of care and says: "It is a blessin and truly providenshul. You know more Old Drone than you look or I could ever thought."

So we had our plans financial all fixed up oncet again for the winter and our creditors settled, and slept peaceful in our woodsheds. We were disappointed the worst ever about the dog, but our creditors wont be troublin us this winter as we figger nor our lovin wives questionin us very much either if the skunks hold out.

* * *

Now I have related about the pleasantest things as has happened to me the past month, except my arrangement for perfectin my hunger-winter resistant strain of bees is goin forrards splendid. The corn stalks is layin true to the ground just as I put em, and no buzzin by the bees inside. Geo. Demuth in his stuck up langwage would call it winter quiessents and write two pages on it. I just call it no fussin by the bees and a good sign. That's enough.

But what else has happened to me I can't tell full. It's so depressin. Awful rains has flooded Hardscrabble Creek bottom till its a place for submarines and not for mushrat traps. Not a trap down on the whole creek so that financial prop has gone outer under me complete and mushrat fur is awful high to. But worst of all is that pullet that stole her nest up in Ab's hay mow over his cow stable where I told my good wife I had put the supers of surplus honey she had sold to the grocery, me expectin to buy honey with fur money and get the honey up

XUM

in there without my wife knowin to much about it. But she found the ladder I hid and went up there for the eggs. I was all honest intenshuned about it to. But I dont know as I can ever take my pen in hand and write about subsequent events. But I may for a warnin and example to errin husbands elsewhere, as aint honest intenshuned like I be.

Ernie Root hasnt cut those slabs for health or for firewood either yet and its gettin colder and colder.

That Frod check for $1,000,000 for black foxes sent by old man Burr of Willits, Californy, warnt no good and I cant start a competive fur farm just yet to drive old Byer of Ontario out of business as how ought to be done. But don't buy of Byer. Wait for me to get into fox farmin when I get a backer.

Its 'a awful time for me, friends. Write me and hold up my hands. It's winter, and if it's to cold the skunks may not run and it may be Roots' lumber yard for me again afore spring. Merry Chrismas. OLD DRONE.

P. S.—The high-brow beekeepin gang aint got me down yet nor my new strain of bees if the skunks run this winter and public bee opinion will rally to my rescue. Write me. Some have sent Chrismas presents aforetimes about this time of year.

Reliable Package
Bees are Profitable

And it takes more than good intentions and financial guarantees to produce and deliver them safely to you. Those who have specialized and have had years of experience in package shipping can unquestionably serve you best. Their prices are right because they have their businesses organized and equipped to produce the best at least cost.

We have been shipping package bees thirteen years and are now preparing for the season of 1926. Let us quote you prices on your requirements for the new year.

W. D. Achord

FITZPATRICK, ALA.

ROBINSON'S comb foundation will please the bees, and the price will please the beekeeper. Wax worked at lowest rates. E. S. Robinson, Mayville, N. Y.

FOR SALE—Gleanings from February, 1906, to January, 1925, inclusive. Best offer takes them, f. o. b. here. T. Edward Diener, Cucamonga, Calif.

FOR SALE—40 10-fr. 4¼x4¼x1⅞ section supers. Painted, good condition, $20.00. Five twin-mating nuclei with combs, no disease, 2.50. Or will exchange for 4x5 supers (Danzenbaker only). J. G. Kilian, Ridgeway, N. C.

FOR SALE—Good second-hand 60-lb. cans, two cans to a case boxed. We have large stocks of these on hand. Please write for prices if interested. We are offering only good cans and good cases. C. H. W. Weber & Co., Cincinnati, Ohio.

WANTS AND EXCHANGES

WANTED—Two or four frame honey extractor. Wm. Gabriel, Hartford, S. D.

WANTED—Bees in colonies. Sever Lavold, Viroqua, Wis.

WANTED—2-frame extractor, reversible or non-reversible. W. O. Goble, Bussey, Iowa.

BEES AND QUEENS

WHOLE colonies of bees, if advertised for sale in these columns, must either be guaranteed free from disease, or, if not so guaranteed, the exact condition of the bees and the conditions of sale must be clearly stated in the advertisement; or, it will be satisfactory if the advertiser will agree to furnish a certificate of health from some authorized bee inspector at time of sale.

UNTESTED Italian queens, $1.00 each. Autauga Apiaries, Autaugaville, Ala.

HARDY Italian queens, $1.00 each. W. G. Lauver, Middletown, Pa.

QUEEN BEES in season, $1.00 each. Graydon Bros., Rt. 4, Greenville, Ala.

1926 PACKAGE BEES—Pure Italians. Write for prices. J. J. Scott, Crowville, La.

WHEN IT'S GOLDEN, IT'S PHELPS. C. W. Phelps & Son, Binghamton, N. Y.

GOLDEN Italian queens, nuclei, and package bees for 1926. Write for prices. E. F. Day, Honoraville, Ala.

LEATHER-COLORED Italian queens, $2.00 until June 1; after, $1.00; tested, $2.00. A. W. Yates, 15 Chapman St., Hartford, Conn.

FOR SALE—30 colonies of bees and equipment. Inspection certificate furnished. Forrest M. Ross, Benton Harbor, R. F. D. No. 5, Mich.

SHE-SUITS-ME queens. Untested 3-banders, $1.00 each; 25 or more ordered in advance, 75c each. Safin cage with initial order. Allen Latham, Norwichtown, Conn.

GOLDEN ITALIAN queens, producing large beautiful bees, solid yellow to tip. Package bees, nuclei circular, 1926 ready free. Dr. White Bee Co., Sandia, Texas.

THREE-BANDED Italian queens. Package bees for 1926. Gentle and good honey-gatherers. Everything guaranteed. Write for price list, which gives full information. Taylor Apiaries, Luverne, Ala.

FOR SALE—91 colonies Italian bees, fed and packed for winter, together with apiary equipment in A-1 condition with certificate of health from bee inspector. Robert G. Moon, Cottam, Ont., Canada.

GOLDEN ITALIAN queens for sale, 1, $1.00; 6, $5.00; 12, $10.00; 100, $75.00. Package bees in season, 20 per cent to book your order for spring delivery. J. F. Rogers, Greenville, R. F. D. No. 3, Ala.

BRIGHT American Beauty Italian queens and bees. Untested queens, $1.00, 3 or more, 75c each; $8.00 a dozen. Three-frame nuclei, $5.00. Guarantee safe arrival. Tupelo Apiaries, J. L. Morgan, Apalachicola, Fla.

BOOKING orders for high-grade three-banded Italian bees and queens, 2-lb. pkg., $4.50, discount on quantity. Select untested queen, $1.00; $10.00 per dozen; select tested queen, $1.50. Inspector's certificate with each. J. Allen, Catherine, Ala.

SUPERIOR ITALIAN BEES AND QUEENS. Get our prices on package bees and queens for 1926 delivery. No disease. We guarantee bees and service to please you in every detail or your MONEY BACK. W. C. Smith & Co., Calhoun, Ala.

BARGAINS in bees for spring delivery. Finest Golden Italian queens, hybrid workers. Astonishing saving in price. Get my square deal offer by mail. Iron-clad guarantee. Spencer Bee Farms. 2436 Fern St., New Orleans, La.

FOR SALE—600 colonies of bees with equipment for 2500 colonies, including $10,000 worth of new Lewis Beeware. Bees guaranteed free from disease. Reason for selling, fruit and fish culture taking our time. Adams & Myers, Ransomville, N. Y.

QUEENS—When you need a good queen you may be sure you will get one of Laws' best by return mail. Can furnish every month in the year. Better requeen those colonies that have paid you least, and do it this fall. Price $1.00 each. W. H. Laws, Box 505, Wharton, Texas.

FOR years we have been shipping thousands of pounds of bees all over U. S. A. and Canada. Booking orders for spring shipping. Write for free circulars telling about a customer gathering 43,000 pounds of honey from 100 packages of bees this past season. Just think! 430-lb. average. Ault Bee Company, Box 98, Weslaco, Texas.

COMBLESS package bees shipped on sugar syrup with queen. Pure Italian stock. 2-lb. pkg., 1 to 10, $4.25; 3-lb. pkg., 1 to 10, $5.25. Write for prices on larger lots or nuclei. No disease and safe arrival guaranteed. Reference furnished. 20 per cent books orders. John A. Williams, Box 178, Oakdale, La.

BRIGHT ITALIAN BEES. I guarantee satisfaction and safe delivery. Sugar-syrup food in transit. Have had this location 14 years and no disease. Health certificate furnished. One 2-lb. pkg., $4.00; 10 2-lb. pkgs., $35.00. Prices furnished on larger amounts. M. Stevenson, Westwago, La.

FOR SALE—700 colonies of bees, big extracting honey outfit in 8 yards. A little disease, 10 acres of land, 8 lots, 8-room house, 2-car garage, honey-house. Buildings all new. Excellent location and healthy climate. If you have the money to swing a big deal come and look this over. Will sell including a honey crop or without. E. W. Fox, Fruitdale, S. D.

ATTENTION, NORTHERN HONEY PRODUCER—ST. ROMAIN QUALITY BEES ready for 1926 season. I am in position to furnish several carloads of nuclei and pound packages at a very reasonable price. Shipping season starts April 1, 1926, and all bees are absolutely free from disease. I furnish health certificate with each shipment, also guarantee safe arrival. All bees shipped on comb of emerging brood and honey for feed in transit, also combless packages, if customer desires. Prices as follows: 1 2-lb. pkg. with queen, $3.00; 1 3-lb. pkg. with queen, $4.00; 1 4-lb. pkg. with queen, $5.00. Large orders will be given special attention. Address John St. Romain, Marksville, La.

MISCELLANEOUS

CHINCHILLA and Angora fur rabbits. Price list. West Park Nursery, Appleton, Wis.

"BEES AND HONEY" is the only bee paper in all the great Pacific Northwest—soon to be America's most wonderful beekeeping territory. Sample copy free. Gleanings ($1.00) with Bees and Honey ($1.00), both together one year for only $1.60. Address George W. York, Editor, 524 First Ave., So., Seattle, Wash.

THE BEE WORLD—The leading bee journal in Britain and the only international bee-review in existence. It is read, re-read, and treasured. Will it not appeal to you? Specimen copy free from the publishers. Send us a postcard today. It is well worth your little trouble. The Apis Club, Benson, Oxon, England.

HELP WANTED

WANTED—Beeman for my Colorado apiaries. W. J. Stahmann, Mesquite, N. M.

WANTED—Beekeeper for season of 1926, April 1 to Nov. 1. Bee-Dell Apiaries, Earlville, N. Y.

WANTED—Experienced beekeeper. Season starts April 1. Wages or share basis. J. D. Beals, Oto, Iowa.

WANTED—Experienced queen-breeder for season of 1926. Apply at once. Hayneville Apiary Co., Hayneville, Ala.

WANTED—Young single man of good habits to assist with light farm chores and general beekeeping shop work. 700 colonies. Experienced farmer and beekeeper preferred. Position open for winter months, full season or longer. The Hofmann Apiaries, Janesville, Minn.

SITUATION WANTED

WANTED—A position by an experienced beekeeper with a large producer. Can furnish the best of references. Elerey Hendrickson, Durham, Ark.

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MANUFACTURERS OF
"BLOSSOM-SWEET"
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BADGER BRAND
5 and 10 lb. Honey Pails.

We specialize in 5 and 10 lb. round pails and 60 lb. square cans. Plain and Lithographed cans of all descriptions.

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ESTABLISHED 1856
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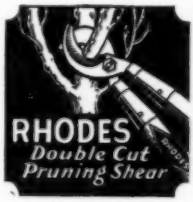
Three ply foundation, standard stock of supplies kept on hand for prompt shipment. Send us your inquiries and orders early for quick action.
J. NEBEL & SON SUPPLY CO.
Montgomery County High Hill, Missouri

CANDY FOR WINTER
When packing your bees be sure and give them some of this candy. Just what you need for colonies short of stores. Put up in convenient form, easily and quickly placed in hive. A trial will convince you. Send for circular and price.
H. H. JEPSON
237 Park St. Medford 55, Mass.



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Most powerful pruners made. Used throughout world. All styles, all sizes. Shipped postpaid. Write for booklet. Rhodes Mfg. Company, Grand Rapids, Mich. 328 S. Division Ave.

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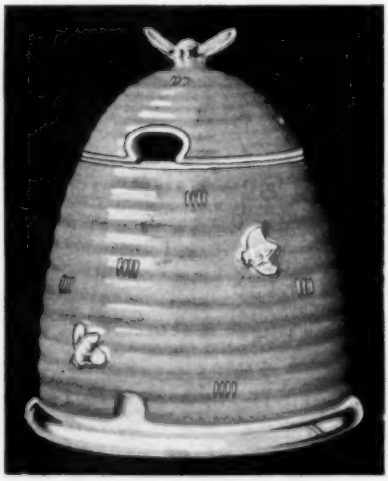

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Honey Dish
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Ivory and Gold
FINEST PORCELAIN WARE

The finest and most appropriate remembrance you can send a beekeeper friend.

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Will send direct, if you wish, with your name as giver

The A. I. Root Company, Medina, Ohio, U. S. A.

Queen Talks

BY M. J. DEYELL, Apiarist

THE VALUE OF QUEENS THAT PRODUCE GENTLE BEES
(Talk No. 3.)

A few years ago a man sent us an order for the most vicious queen we had in our apiaries. Evidently he wanted such a queen to produce bees that would drive thieves away from his orchard. We were unable to furnish a queen of this character. If we ever find a vicious queen her head comes off immediately.

Some years ago, while engaged in commercial honey-producing in Northern Michigan, I bought an apiary that had some vicious hybrids that would sting man or beast on the slightest provocation; in fact, they once drove me out of the apiary. Had it not been possible to change the temperament of those vicious colonies by introducing Italian queens from a known gentle strain I would have been tempted to quit beekeeping.

Some may claim that it takes vicious bees to gather big crops of honey; in other words, vicious bees have more pep than gentle bees. As the result of the scientific rearing of queens it is possible to so blend industriousness and gentleness that vicious colonies can be changed into industrious, gentle colonies, and thus beekeeping becomes a genuine pleasure.

If interested in queens and package bees for early spring delivery write for our prices, also for free booklet entitled "Combless Package Bees," which explains the how of obtaining maximum results from packages.

The A. I. Root Company

MEDINA, OHIO.

Good Bees Good Service

"The five hundred 3-frame nuclei I purchased of you last spring were a fine lot of nuclei, strong and with plenty of brood and honey. Most of them built up into full colonies in one month with very little feeding. The few losses in shipping were made up promptly by you. They were shipped on dates ordered, which is about the biggest item in buying bees from the South. The strain of Italians is good. I believe you to be strictly honest and reliable."—F. W. Lesser, Fayetteville, N. Y., Oct. 12, 1925.

"Bees arrived all in good shape—no loss whatever. They sure are a dandy bunch, and we want to thank you for your prompt delivery and honest dealing. I don't think there was a pint of dead bees in the whole 58 packages."—Wedgewood Bros.

IF YOU WANT BEES AND SERVICE LIKE THIS, BUY FROM

J. G. PUETT & SONS

MOULTRIE, GA.

Package Bees, Nuclei and Queens for 1926

A good strain of Italian bees, unsurpassed as honey-getters. Special equipped combless packages that offer the best in delivery, which is duly affirmed by customers. Bees inspected, no disease. A square deal, safe delivery, and satisfaction guaranteed. If in the market for bees write for prices. They are reasonable and will interest you.

York Bee Company

H. F. YORK. JESUP, GEORGIA

Honey Containers

5-lb. friction-top pails, per case of 12	$1.10
10-lb. friction-top pails, per case of 6	.90
5-lb. friction-top pails, per carton of 50	3.50
10-lb. friction-top pails, per carton of 50	5.00
60-lb. square cans, per case of 2 cans	1.25
60-lb. square cans, in bulk, each	.40
16-oz. round glass jars, per case of 24	1.25
6½-oz. tin-top tumblers, per case of 48	1.60

All above prices are F. O. B. Boyd, Wis.

Write for our prices on comb-honey shipping cases.

AUGUST LOTZ COMPANY

BOYD, WISCONSIN.

XUM

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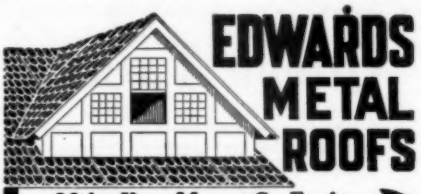
TUBERCULOSIS in this country is a threat against your health and that of your family. There are more than a million cases in this country today.

The germs from a single case of tuberculosis can infect whole families. No one is immune. The only sure escape is to stamp out the dread disease entirely. It can be stamped out. The organized work of the tuberculosis crusade has already cut the tuberculosis death rate in half. This work is financed by the sale of Christmas Seals.

Everybody is helped by this great work—and everybody should help in it. Let every member of your family stamp all Christmas parcels, letters and greeting cards with these able little warriors againstdisease. Everybody, everywhere, buy Christmas Seals—and buy as many as you can.

Stamp Out Tuberculosis with this ChristmasSeal

THE NATIONAL, STATE, AND LOCAL TUBERCULOSIS ASSOCIATIONS OF THE UNITED STATES



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FOR SALE DURING NOVEMBER AND DECEMBER, 1925

Hoffman self-spacing brood-frames, per 100, $4.50. Shallow self-spacing frames, per 100, $3.25. Section-holders for 4¼x4¼x1⅞ super, per 100, $3.00. Scalloped separators for above super, per 100, $1.45.

E. GRESSMAN, HAMBURG, N. Y.

TOO LATE FOR CLASSIFICATION

FOR SALE.—Fancy and No. 1 comb honey. Bargain prices. Poling Bros., Van Wert, Ohio.

FOR SALE.—Fine flavored amber honey in 60-lb. cans, 9c per lb. Sample, 15c. H. J. Avery, Katonah, N. Y.

WANTED.—Experienced apiarist, also an experienced queen breeder. The Stover Apiaries, Tibbee Station, Miss.

WANTED—Competent young beekeeper for two or three months work in Florida beginning in January. R. C. Boswell, Box 864, Titusville, Fla.

FOR SALE. — Golden queens and three-banded bees for 1926. Untested queens, $1.00 each. Tested, $1.50 each. 2-lb. package of bees, $3.00; 3-lb. package of bees, $4.50; nucleus, $1.50 per frame. Additional pound of bees with nucleus, $1.00. No disease; safe arrival guaranteed; bees inspected; never had disease. J. W. Sherman, Valdosta, Georgia.

Glass and Tin Honey Packages

F. O. B. Chicago and Points East.

5-lb. friction-top pails.....per 100, $7.00; per 200, $13.00; per 500, $30.00
10-lb. friction-top pails.....per 100, $10.00; per 200, $19.00; per 500, $45.00

F. O. B. Chicago and Detroit

60-lb. cans, cases of two.....per 10, $11.00; per 25, $25.00; per 100, $95.00

F. O. B. Grand Rapids

½-lb. glass jars.....per 2 doz. case, $1.00; 10 cases $ 9.50
1-lb. glass jars.....per 2 doz. case. $1.25; 10 cases, $12.00

Prices on tin packages from Grand Rapids and glass jars direct from manufacturers, made on request. Complete line of cases for comb honey, honey cartons, labels, paste, etc. Send for list.

A. G. Woodman Co., Grand Rapids, Mich.

WANTED--BEESWAX

We are in the market at all times for beeswax and can pay highest prices. Let us know how much you have and we will gladly quote, or just ship to us at OGDEN, UTAH, and we will give you a square deal with prompt remittance.

Superior Honey Co., Ogden, Utah

FOR YEARS WE HAVE BEEN SHIPPING THOUSANDS OF POUNDS OF BEES ALL OVER U. S. A. AND CANADA

Booking orders now for Spring shipping.

WRITE FOR FREE CIRCULARS telling about a customer gathering 43,000 pounds of honey from 100 packages of bees this past season. Just think! 430-pound average.

AULT BEE COMPANY, BOX 98, WESLACO, TEXAS

Beeswax

WE PAY THE BEST MARKET PRICE

Write for prices and shipping instructions.

The A. I. Root Co.
Medina, Ohio

IN JANUARY ISSUE

Tons of Honey Each Season Without Wintering Bees

Dr. E. Kohn, an extensive producer in western Ohio, will give an accurate statement of his operations and how he saves 25 to 30 pounds of honey per colony each fall by eliminating the rearing of the last brood. You can not afford to miss reading this article.

Watch Your Subscription to Gleanings in Bee Culture

FRICTION-TOP PAILS AND CANS

2½-lb. cans—25, $1.30; 50, $2.40; 100, $4.15; 200, $8.25; 500, $20.00; 1000, $39.00.
5-lb. pails—25, $2.00; 50, $3.50; 100, $7.00; 200, $13.75; 500, $33.00; 1000, $64.00.
10-lb. pails—25, $2.90; 50, $5.00; 100, $10.00; 200, $19.75; 500, $48.00; 1000, $94.

GLASSWARE

8-oz.—Per case, $1.05; 10 cases, $10.00; 30 cases, $28.50. 16-oz.—Per case, $1.35; 10 cases, $13; 30 cases, $37. 32-oz.—Per case, $1; 10 cases, $9.50; 30 cases, $27.

A GRADE TIN PASTE—1 pint, 25c; 1 quart, 45c; postage extra.

Beeswax Wanted.

M. H. HUNT & SON, LANSING, MICHIGAN

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THE MOMENT you begin depositing your savings **BY MAIL** in this bank you have the satisfaction of knowing that your money is in an institution conducted primarily in the interests of its depositors.

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THE SAVINGS DEPOSIT BANK CO. MEDINA OHIO.

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HONEY WANTED

We are ready at any time of the year to take in small or large lots of extracted honey. Send us a sample and advise quantity you have and the price wanted.

HOFFMAN & HAUCK, OZONE PARK, N. Y.

You can have cash for your wax and old combs or cappings at the market price, or we allow a little more in exchange for supplies. Write for our terms and prices.

"Falcon"

Supplies--Queens--Foundation

W. T. Falconer Mfg. Company

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"Where the best beehives come from."

Ask for catalog. *Booklet, "Simplified Beekeeping for Beginners," free.*

HONEY
FOR SALE

For the beekeepers whose supply may be short this season. We have the choicest extra quality sweet clover, fine white clover, alfalfa, some mesquite and a limited amount of orange that we can offer our friend honey-sellers who may be short. Also comb, all grades.

WRITE FOR PRICES

The A. I. Root Co.
Medina, Ohio

Running's Bees and Queens

ITALIANS THAT ARE HONEY-GETTERS

We are now booking orders for 1926 delivery. Shipping begins April 1. We have been producing package bees in the South for six years and have one of the best package and queen-rearing establishments in the South, and have been producing large crops of honey in Michigan for 26 years.

WE HAVE THE STOCK AND KNOW THE BUSINESS

Try one or a hundred and you will want more. They get the honey. We want to show you. Bees and Queens shipped from Epes and Sumterville, Ala. Our prices are right, stock unexcelled and service guaranteed. Write for prices, stating how many you can use.

David Running
Filion, Mich.

AFTER JAN. 1, SUMTERVILLE, ALA.

IF YOU EXPECT TO BUY POUND PACKAGES

DO NOT COMPARE THESE FIGURES

UNLESS YOU ARE INTERESTED IN SAVING MONEY AND GETTING ALL YOUR DOLLARS WILL PURCHASE

John Smith bought 100 ten-frame hives of bees for $650.00.

Each hive composed of	Value.
1 10-fr. dovetailed body	$ .80
1 10-fr. bottom	.70
2 lbs. bees and queen	4.00
10 drawn Hoffman frames	2.00
5 fr. brood should hatch 20,000 worker bees	4.00
Total value each	$ 11.50
Total value 100 hives	$1,150.00
Paid	650.00
Net profit	$ 500.00

Bill Jones bought 156 2-lb. packages of bees with queens for $650.

Each package of bees.	Value.
No 10-fr. body	$ .00
No 10-fr. bottom	.00
2 lbs. bees and queen	4.25
No 10-fr. drawn comb	.00
No brood to hatch	.00
Value each	$ 4.25
Total cost 156 pkgs	$650.00
Paid	650.00
Net profit	000.00

So John Smith gained some $500.00 in real value, also 600 lbs. of bees to Bill Jones' 312 lbs. Did it pay?

Guaranteed safe delivery to ports of New York City or Baltimore, Md., at following prices: 10-fr. hive with untested Italian queen, in lots of 10 to 25, $7.00 each; 26 to 50, $6.75 each; 51 to 100, $6.50 each. Tested queen, 50 cents per hive extra.

No orders accepted for less than 10 colonies at these prices. NO FOUL BROOD IN PORTO RICO. Booking orders now for spring delivery. 20 per cent books your order.

THE TROPICAL APIARIES, AIBONITO, PORTO RICO

PENN G. SNYDER, PROPRIETOR.

$500 to $1200 per acre from KELLOGG Strawberries

F. E. BEATTY, Pres.

This FREE BOOK tells how to grow them

Here is my brand new Berry Book that tells you how to make $500 to $1,200 per acre from Strawberries grown the "Kellogg Way." This may seem like a lot of money to get from a single acre in one year, but it is easy to make these big profits when you have the right plants and the right method of growing them. More than 100,000 growers are making these profits the "Kellogg Way." Here's the proof.

H. M. Hansen, Wisconsin, says—"You have my permission to make your claims even stronger because my returns from Kellogg berries show better than $1,400 per acre."

"From only one acre of Strawberries grown the "Kellogg Way". I made $1,800 last year."—W. L. Tillston, Vermont.

E. D. Andrews of Michigan fully paid for his $4,000 home from the profits off 2 acres of Kellogg's Thorobreds.

W. R. Randall of Illinois made at the rate of $1,900 per acre, and Jacob S. Rodgers of Pennsylvania picked 8,500 quarts off one acre, which brought $1,700.

One Acre of Kellogg Strawberries Will Make More Money Than 40 Acres of Common Crops

Big Crops of Berries and big profits come easy when you know how. I spent 30 years learning how to make berry plants produce these big money crops. This very berry book I send you **FREE** tells the whole story. In one hour with this book you can learn what it has taken me 30 years to learn. Send for it—read it and see how thousands are making these profits from Kellogg Strawberries. It's the finest Berry Book ever produced—also tells how to get big crops of Raspberries, Blackberries and Grapes. The book is **FREE**—just send a post card.

R. M. Kellogg Co., Box 2623, Three Rivers, Mich.